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Questions and Answers For The Refinery MACT I Rule (11/20/98)

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APPLICABILITY AND COMPLIANCE DATES

1. Question: Does §63.640(d)(4) in the final Refinery MACT Rule exempt all of the vents in the catalytic cracking unit, the catalytic reformer unit, and the sulfur plant?

Answer: Although one could conclude that this exemption applies to all of the vents in the sulfur recovery plant, the intent of the rule was to exempt only the tail gas vent on the sulfur recovery plant, and the regeneration vents in the catalytic reformer and catcracker units.

2. Question: What date is used to determine if a unit is an existing source or a new source?

Answer: The deciding date is the proposal date of the Refinery MACT Rule (July 14, 1994). Construction that began after that date is considered a new source and those sources would be subject to the new source provisions, provided the new source potentially emits more than 10 tons per year of a specific HAP or 25 tons per year of total HAP.

For the Refinery MACT, it is going to be difficult for anybody to meet the definition of reconstructed source. In the MACT Rule, the affected source is the whole refinery.

The EPA did not envision that a reconstructed source would ever occur under the Refinery MACT rule, given the breadth of the definition for affected "source." In order to meet a reconstructed definition, the reconstruction cost would have to exceed 50 percent of the cost of a new refinery. If you are building a new process unit and that process unit in and of itself has annual potential emissions of 10 tons of any one HAP or 25 tons of a combination of HAP. Such a unit is a new source. Simply installing a new tank at a refinery would not trigger the new source MACT definition.

3. Question: Does a brand new process unit have to be measured by itself?

Answer: Yes, if the process unit emits only 15 tons of a combination of HAP's per year, and no single HAP emissions are 10 tpy or more, the unit is not a new source and therefore, is subject to existing source MACT, not new source MACT requirements.

4. Question: What if an existing unit is modified in a way that causes the unit to have HAP emissions greater than 25 tons per year?

Answer: It does not make any difference because it is the refinery as a whole that is the affected source--and that unit would have been subject to existing source MACT requirements already. It depends on what you mean when you say you've "modified" the process unit. If what you mean is you are doing something that is within the original design, it probably does not trip anything. If you go in and retool it in some manner--you change a catalyst--then it is still subject to the requirements for existing sources. You in essence look at how you have changed what has to be controlled, but it never causes it to become a new

source. And if what you did instead was add a bunch of equipment, it would probably be something you would have to consult about with your attorneys.

When we drafted these sections and a lot of the provisions under refinery applicability, we were deliberately trying to avoid getting a lot of stuff under the new source MACT requirements. We tried to consider the normal types of changes that go on at facilities. We did not want that to creep somebody into new source because the definition of source is so broad. If that happened, the whole site would have to meet the new source standard and that would have a very severe impact.

5. Question: This is a question about an addition after July 14, 1994 of a carbon adsorption unit at a truck loading rack (part of SIC code 2911) in addition to another (refrigeration) control unit. Do we have until August 18, 1998 (compliance date for existing sources) to comply or upon initial startup (compliance date for new sources)?

Answer: I believe that the compliance date would be August 18, 1998. First, adding a carbon adsorption unit would be considered an add-on control device and not a new process unit. As a result, the equipment that serves the tank truck loading operation is "existing" and has until August 18, 1998 to comply.

6. Question: This question has to do with tanks and gathering lines in a crude oil field with the line going to a refinery. Do the tanks and gathering lines come under Refinery MACT?

Answer: I do not believe they do because they are not facilities classified under SIC 2911.

7. Question: Was there a new definition for "equipment" in the Federal Register correction notice dated June 12, 1996?

Answer: Yes, under §63.640(d)(3), the word "equipment" was changed to "pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, or instrumentation system."

8. Question: Does potential to emit (PTE) include controls?

Answer: EPA's general provisions for MACT rules (40 CFR part 63, subpart A) require that only federally-enforceable controls be included in calculations for determining major source status. In litigation, the court ruled that EPA did not adequately support the decision not to credit State or local controls that are not federally enforceable from PTE. EPA is in the process of deciding whether to change the rule, but it remains in effect. However, on January 25, 1995, the EPA issued a transition policy memo stating that for the period through January 1997 effective State-permitted controls are considered as effective limitations on your PTE. (Note: On August 27, 1996, the EPA extended the transition period to July 31, 1998.)

There are also some additional provisions within the transition policy memo that distinguish between sources above or below 50 percent of major source status (i.e., above or below 5 tpy of any one HAP or 12-1/2 tpy of a combination of HAP. Now, of course, for Refinery MACT this is almost a non-issue, because we

probably are considering that most refineries are major sources of HAP emissions. So it is really an issue for other MACT rules, although there may be a few refineries below the cutoff for potential to emit.

9. Question: If at some point in time a unit is shut down, and then brought back on-line several years later, would the unit be considered a new MACT source when it was brought back on-line, or would it still be an existing MACT source?

Answer: Given the definition of new source in the MACT Rule, as well as the definitions in the General Provisions, if you have not performed any construction in bringing it back on-line, I do not think it would be a new source. This situation would need to be researched by legal counsel before you rely on this, but the definitions generally require some construction activity in order to be considered subject to the new source definition.

Of course, those "reconstruction" definitions go back to the NSPS definitions. The reconstruction must exceed 50 percent of the cost required to build a new affected facility, which under the MACT Rule implies a whole new refinery unless you are building a new process unit that by itself has HAP emissions of greater than 10 or 25 tons per year.

10. Question: Regarding unit shutdown, if that unit has been used for netting or anything, does it make any difference? When I shut down that source, I used the emission credit to net out of a prevention of significant deterioration (PSD) or new source review, and now I am not going to construct a new unit, but I am going to restart that unit. Under the MACT Rule, how you are going to view that activity?

Answer: The question is that if he has used the process unit shutdown to net out of a PSD review, how does that affect the determination? Is it a new source? As far as the way the rules are written in Part 63--the General Provisions definitions and the Subpart CC language--the unit is not a new source. However, you may have a problem under PSD review. But that is separate and distinct from the Refinery MACT.

11. Question: If a unit is modified or new and is subject to a NESHAP or the SOCFI HON Rule, does the Refinery MACT Rule apply to the unit?

Answer: If you have a unit that is subject to the HON, it is explicitly stated in the Refinery Rule that you are not subject to the Refinery MACT standard [§63.640(g)(7)]. What we were trying to do in the applicability sections of both of those rules is make it very clear that you would fall under either of those rules, but not both.

What we have done with a lot of the source categories that are being addressed under the current MACT program is we have tried to delineate them distinctly. In other words, you cannot be both a refinery and a SOCFI unit. I do not mean the plant site, but the same distillation column, for example, cannot be called both. We explicitly exclude HON units from applicability in the Refinery MACT Rule, and exclude refinery units from applicability in the HON.

It is possible that something could be subject to an old NESHAP, such as benzene storage (40 CFR 61, Subpart Y), and still be subject to the Refinery MACT standard. That is what we dealt with in those overlap provisions. Because of differences in applicability criteria and requirements, you need to be careful. But you can have an old Part 61 NESHAP applying and we have tried to accommodate that in some way so that you do not have the overlapping or conflicting requirements.

The modification concept does not really change among the different rule types. You are still an existing source under Part 63. Now, this unit could be a new source modified unit and have some applicability, but again the overlap sections of the Rule try to address that. We will not claim perfection if there is a problem. What you need to do is contact the Agency and we will see whether or not the Rule needs some clarification. As many of you may be aware, we have been doing a series of notices on the HON to clarify things. And if we have similar problems here, we can make corrections to the Rule text if it is appropriate.

We need to differentiate between what happens to the unit when you have had a modification or a process change versus what happens to an emission point within that unit. So an individual storage tank may be an emission point within a particular process unit. A modification to that tank would not make the unit a new MACT source, but it could trigger changes in the individual emission point. That is what we meant when we said to check whether the new source performance standards for that emission point can be triggered by a modification. However, it would still not be subject to new source MACT. There is a provision §63.640(l) explaining that if a Group 2 emission point becomes a Group 1 emission point by a process change, it is still an existing unit, but the emission point that was formerly exempt would now be subject to the existing source requirements.

An example would be a storage tank that had been storing an exempt material. The tank's contents did not contain HAP and had a vapor pressure below 1.5 psi, but now you have decided you are going to put gasoline in it. The tank is at the refinery associated with an affected unit, due to its receiving product from a unit that produces gasoline. The gasoline has a vapor pressure above the cutoff and it contains HAP. So now an operational change has caused that Group 2 point emission point to be a Group 1 emission point. Whereas it was exempt before, it is now subject to the controls for existing sources.

That has not changed the applicability of whether you have had some modification or process change. It has not affected whether the unit is subject to new or existing source requirements. The unit is still subject to existing source requirements. But that tank is now pulled into the existing MACT source requirements because of a process change that you made that brought it to Group 1 status. And it further explains that if a storage tank was out of Group 1 service for a while and then it is brought back into Group 1 service--and this is referenced back in the HON §63.120--it gives you 90 days to do an inspection to verify that it complies with the Group 1 service you have brought the storage tank back into.

12. Question: If you have a marine loading operation that is contiguous with a refinery, but the loading facility is under the 10/25 tpy cutoffs, is it covered by Refinery MACT?

Answer: The answer is both "yes" and "no."

Yes, it is covered because the 10/25 tpy cutoffs are in the Clean Air Act. It applies to an entire contiguous facility, and includes a refinery and also other things like marine loading operations or perhaps an adjacent petrochemical complex. But within the Marine Tank Vessel MACT Rule (40 CFR 63, Subpart Y) are applicability criteria that exempt things that fall under the 10/25 tpy cutoff. So, from this standpoint, the answer is “no.” If you have a marine terminal there that emits less than 10/25 tpy, you do not have to worry about it. But you can control it if you want to help out the refinery under the emissions averaging provisions.

Again, the “no” part of the answer pertains to the marine loading requirements. You do not under that rule have to apply controls unless the loading area is major in and of itself. Without explaining, there is general applicability of the sites to MACT standards. That is within the statute. But within the rule we have some cutoffs that define which things have to be controlled and that is where the “no” answer arises.

13. Question: If fuel loading docks are not contiguous with a refinery, what is the compliance date?

Answer: First of all, you would have to check the applicability provisions of the Marine Tank Vessel MACT Rule for a stand-alone marine facility or a marine facility in conjunction with a gasoline marketing terminal, because that rule has specific applicability criteria and dates associated with it. It is both a RACT rule and a MACT rule. The compliance dates for RACT are 3 years from the promulgation of the final rule, so that would be September 1998. The MACT Rule allows 4 years, which is September 1999.

14. Question: For a loading rack at a gasoline distribution facility, is the compliance date December 1997 or is it August 1998?

Answer: If the loading rack is contiguous with the refinery and under common control, it would have the SIC code 2911. Then the compliance date for the rack is August 18, 1998. If you are an independent loading facility (i.e., a stand-alone bulk gasoline terminal) under the Gasoline Distribution (Stage I) MACT Rule (40 CFR 63, Subpart R), then you would be under the 1997 compliance date.

15. Question: Does the fuel gas exemption apply to process units that are subject to new source performance standard Subpart GGG, Equipment Leaks of VOC in Petroleum Refineries?

Answer: The EPA modified Subpart VV and the Subpart GGG cross-references to Subpart VV. Many years ago when the EPA prepared the equipment leak rules, they had one generic equipment leak rule, Subpart VV. All Subpart GGG really did was define the affected facilities and make some unique definitions for refineries. Then the rule pointed you back to Subpart VV for the requirement.

Unfortunately, we did not modify 40 CFR 61, Subpart J, the benzene equipment leaks rule. The EPA would like to get all the equipment leak rules pulled together to a common set of provisions to reduce some of the complexity, but has not had the resources to do this.

16. Question: Would crude tanks and final product blend tanks that are separated from the process unit by being the next step in blending be regulated under Refinery MACT?

Answer: It would be difficult to argue that a crude tank is not feeding a unit of the refinery or that a product tank is not receiving from a refinery unit. So I do not think that you would be able to argue that they are somehow separated. If they are contiguous and under common control, they are subject to the Refinery MACT Rule.

17. Question: There is a loading rack at a refinery, and there are no storage tanks associated with it. Would the rack have to comply with the Refinery MACT Rule?

Answer: The answer is "yes," provided the rack is under SIC code 2911, it loads more gasoline than the applicability cutoff, and its emissions are greater than the applicability cutoff. So if the loading rack is not under SIC code 2911, you need to see whether the applicability cutoffs are achieved.

18. Question: Can compliance plans for existing MACT requirements be as simple as indicating that the compliance date for sources will be met?

Answer: I think that in general the answer is that compliance plans can be as simple as that; however, you want to consider the fact that if there are possibilities where you want to ask for an extension, there are times that requirements have to be met prior to asking for that date. Other situations may occur where your compliance plans impact other rules where you may want to be a little bit more specific than that so that there are no surprises for either you or the agency as the compliance date approaches.

Also, if you have several options or flexibilities given to you on how to comply, you might either make the selection in your Title V permit ahead of time or indicate that those options are available and you will make your selection with the compliance demonstration. You should make clear how you plan to demonstrate compliance.

19. Question: How do you calculate the cost basis to determine whether you have triggered reconstruction under NSPS and also under Refinery MACT?

Answer: As under the NSPS rules, you look at what is defined as the affected facility. And then you have to determine what the replacement cost of that facility would be. If you have expended more than 50 percent of the capital cost to replace that affected facility, then it is considered "reconstructed." It can be complicated depending on where you are. Let us just say you have spent more than 50 percent of the cost of a new FCCU. Then it would be considered a reconstructed FCCU and subject to Subpart J of Part 60 (NSPS). However, for Refinery MACT you would have to exceed 50 percent of the replacement cost of all the process operations at your refinery site, since the affected facility is the entire refinery facility. So the typical refinery would have to basically rebuild the facility before they would trigger reconstruction.

So I think it is very unlikely, unless you are a tiny facility that you would ever trigger reconstruction under the Refinery MACT standard. But under NSPS, the definition of the affected facility is much smaller and it is much more likely you would have a reconstructed affected facility.

20. Question: Is the compliance date for submitting startup, shutdown, and malfunction plans (SSMP's) March 16, 1997?

Answer: No, there is no deadline date for submitting a plan. In fact, the plans do not have to be submitted for approval to anyone. They are for the facility's use. It is required that you have them, but you do not submit them. They must be made available for inspection in the event that a State or Federal inspector requests to see it, and they can request that certain changes be made if the plan is found to be deficient. But there is no requirement to submit it for approval.

21. Question: Please provide the reference (or additional details) on consolidating methyl tert-butyl ether (MTBE) units under the Refinery MACT rule instead of the SOCMH HON (40 CFR part 63, Subpart G). (Vol. I, p. 86)

Answer: If a source has a unit that is primarily a petroleum refining process unit, but produces some MTBE, then the unit is subject to the Refinery MACT rule. The converse is also true. If you have a process unit that produces predominantly MTBE, then the unit is subject to the SOCMH HON MACT. Therefore, a source must ask itself the following question, "What is the predominant product produced by this process unit?" If it is a petroleum refining type product, then the unit is subject to the Refinery MACT. If it is a SOCMH product (e.g., MTBE), then the unit is subject to the SOCMH HON MACT.

Please consult the Refinery MACT preamble in the Federal Register, 60 FR 43253 (or page 14 of the handouts in the workbook). There is a discussion in the preamble regarding this subject under the section entitled "Overlapping Regulations." As discussed previously, the primary product produced by the process unit governs which MACT rule applies.

22. Question: Does the EPA have a position on whether MTBE plants which also produce ethyl tert-butyl ether (ETBE) are subject to the SOCMH HON MACT or the Refinery MACT?

Answer: Similar to the previous question, the facility must ask itself, what is the predominant product produced by this process unit? Units producing MTBE (a HAP) are subject to the SOCMH HON MACT, but ETBE (a non-HAP) is not subject to any MACT standard. Additional citations on this subject are in the Refinery MACT preamble on page 43253 in the left column (see Overlapping Regulations). There is also some discussion in the background information document (BID).

23. Question: If a refinery has emissions under 10 megagrams (Mg) of benzene per year from its waste operations (i.e., is exempt from the Benzene Waste Operations NESHAP), is the refinery exempt from the Refinery MACT?

Answer: If a refinery is below the benzene threshold for the Benzene Waste Operations NESHAP (BWON), it is not required to control its waste operations under Refinery MACT. The Refinery MACT standard applies to all refineries that are or are part of a major source, as defined in section 112 of the Act.

24. Question: We have an off-site feed tank containing HAP that is feeding a refinery unit. Is the tank subject to the Refinery MACT?

Answer: If the tank is not part of the plant site, the tank may not be subject to the Refinery MACT rule regulating that plant site. If the tank is at another refinery, then the tank may be subject to the Refinery MACT. However, the tank would not be your concern since it is not located at your refinery. If the tank is not at a refinery but simply out somewhere standing alone (i.e., not part of a major source), the tank may not be subject to any of the MACT standards that are currently promulgated.

25. Question: Are Research & Development (R&D) units subject to the Refinery MACT? If so, does this include pilot plants?

Answer: Section 63.640(g)(1) of the Refinery MACT rule exempts R&D units. See 60 FR 43266 in the Refinery MACT (§63.641), where a "Research and development facility" is defined as "laboratory and pilot plant operations whose primary purpose is to conduct research and development into new processes and products, where the operations are under the close supervision of technically trained personnel, and is not engaged in the manufacture of products for commercial sale, except in a de minimis manner."

26. Question: Please explain the differences between the terms "Group 1" and "Group 2."

Answer: In §63.641 of the Refinery MACT rule, there are a number of definitions for different types of "Group 1" equipment. For example, to be a "Group 1 storage vessel," the storage vessel must meet volume criteria, HAP liquid concentration criteria, and product vapor pressure criteria. Storage vessels that do not meet "Group 1" are categorized as "Group 2 storage vessels." This classification also applies to loading racks, marine tank vessels, miscellaneous process vents, and wastewater streams. "Group 2" equipment is not subject to the rule's control requirements.

27. Question: What are the advantages and disadvantages of including a chemical manufacturing process unit under the Refinery MACT (instead of the SOCFI HON MACT)?

Answer: It is important to note that which MACT the chemical manufacturing process unit is subject to is determined based on the predominant product produced, not which is more advantageous for the facility. To answer the question, one advantage is that maintaining compliance (monitoring, recordkeeping, reporting, etc.) is less complex if all the units at a refinery are subject to the Refinery MACT rule.

28. Question: If a major HAP source (source exceeding the 10/25 tpy threshold) reduces its potential emissions below the 10/25 tpy threshold, will the relevant MACT rule for that source no longer be applicable? Or is it "once major -- always major"? Does the same principle apply for a source subject to Title V or can a source drop out of Title V at a later date by reducing its emissions?

Answer: For MACT standards, the answer is "once in -- always in". However, a refinery source has until August 18, 1998 to demonstrate to the EPA that it emits below the 10/25 tpy threshold. For all MACT regulations, a source does not have to declare its major source status until the first compliance date. The

official first compliance date for Gasoline Distribution MACT for terminals was originally December 14, 1995 but it was extended until December 15, 1997 (61 FR 7718).

29. Question: The regulation requires storage vessels with floating roofs to be brought into compliance within 10 years or at the first degassing and cleaning activity, whichever is first. By when should storage vessels with floating roofs that do not require a degassing to be brought into compliance?

Answer: The intent in allowing up to 10 years for floating roof vessels to be brought into compliance was to avoid situations where bringing a vessel into compliance by August 18, 1998 would, in the short term, result in greater emissions. Such situations can occur when vessels with floating roofs must be degassed and cleaned before seals can be upgraded. The emissions from degassing and cleaning are greater than the emissions that would be reduced by the upgraded seals. This compliance extension was not intended to be applied to all vessels. For example, if a vessel is degassed and cleaned in less than 10 years after August 18, 1998, the vessel must be brought into compliance at that time. To be consistent with the intent of the regulation, storage vessels that do not require degassing to be brought into compliance should be in compliance with the regulation by the August 18, 1998 compliance date.

30. Question: Are vents from an asphalt oxidizer system a process vent under the Refinery MACT or will they be covered by the upcoming asphalt MACT?

Answer: Vents from asphalt oxidizers are not specifically exempted from the applicability of the Refinery MACT. Currently, EPA is not intending to include asphalt oxidation units at refineries in the Asphalt Roofing and Processing NESHAP, which has not yet been proposed. It is apparent that vents from asphalt oxidation systems, if they meet the definition of a miscellaneous process vent, are subject to the provisions of the Refinery MACT.

31. Sections 63.642 (g), (i), and (k) appear to be in conflict. If an existing refinery complies with the requirements in 63.642(k), does it also have to comply with 63.642(g)? Our concern is that 63.642(g) contains the word "shall" whereas 63.642(k) contains "may."

Answer: We do not believe there is a conflict in these paragraphs. Section 63.642(k) uses the word "may" because it is an option to use point by point compliance. Paragraph (i) of this section expresses the obligation to meet the standard expressed in 63.642(g) by using either the provisions in paragraph (k) or use the emissions averaging provisions in paragraph (l) for some of the emission points and paragraph (k) for the other points. If we had drafted paragraph (k) using "shall," that would have meant that everyone would have to use the point by point compliance, which was not the intent of the rule.

Paragraph (g) of 63.642 does not establish separate enforceable conditions. In fact, following the equation we have a statement that the emission level represented by the equation is not fixed and may change. Paragraph (i) of 63.642 also specifies that the owner or operator is to demonstrate compliance with the equation in (g) by complying with paragraph (k) or by complying with a combination of the provisions in paragraph (l) and paragraph (k). It is difficult to understand how there can be misunderstanding of the compliance demonstration requirement here.

STORAGE TANKS

1. Question: Does the Refinery MACT Rule require controls on tanks that might be used for emergency blowdown or shutdowns, such as slop tanks or blowdown-shutdown tanks?

Answer: The terms “slop” and “slop oil” are used in a lot of different ways. If it is a slop tank or slop oil tank that is part of your wastewater facility, then you would need to check for applicability under the benzene waste operations rule. By the definition in Refinery MACT, it is not a Refinery MACT storage tank. The tank is exempt from Refinery MACT storage tank provisions if it is a wastewater tank, but you then have to check the wastewater provisions which invoke the Benzene Waste Operations NESHAP and see if it is subject to those regulations.

For a blowdown-shutdown tank, if that is the only occurrence under which it qualifies as Group 1 service, then I would read it as falling under that exemption for only incurring that service for temporary or process upsets. I would caution that you should include that eventuality in your startup, shutdown, and malfunction plan. To conclude, the blowdown-shutdown tank is not subject to the Refinery MACT control requirements, but you need to say that clearly in your SSMP.

2. Question: We have a riveted gasoline tank still in use. Is there anything in the Refinery MACT Rule preventing use of a riveted tank as long as it has proper roof and seal controls?

Answer: There is no prohibition on a riveted tank; however, I would caution that in checking your seal gap requirements, you may have more difficulty meeting the seal gap requirements with the riveted tank. But there is nothing that prohibits the riveted tank per se if you can install a rim seal that meets the gap requirements.

3. Question: Does the MACT Rule for storage tanks require secondary seals on existing internal floating roof tanks? (Vol. I, p. 106)

Answer: For an existing MACT source, the answer is "sometimes." As shown in the flow diagrams (workshop notebook) for storage tanks, the tank has rim seal requirements. If the internal floating roof tank (IFRT) is equipped with a liquid-mounted or mechanical-shoe primary seal, the IFRT does not need a secondary seal to be in compliance with the Refinery MACT. However if the IFRT is equipped with a vapor-mounted primary seal, a secondary seal must be installed to be in compliance. Also, if the IFRT is equipped with a flexible wiper primary seal, which is common on many internal floaters, then the tank would require a secondary seal to be in compliance.

4. Question: The storage tank provisions in §63.646(a) of the Refinery MACT rule do not specifically state that the requirements of §63.119(a)(2) do not apply, which says that a closed vent system in some control devices is required if the maximum true vapor pressure (TVP) is greater than 11.1 psia. Is this correct?

Answer: Yes. All of the EPA regulations for storage tanks have provisions that do not allow tanks storing products with a TVP greater than 11.1 psia to control emissions with a floating roof. The rationale for the 11.1 psia cutoff is that products with a TVP that high are close to boiling at atmospheric conditions. Since floating roofs are not suitable controls if the liquid stock is boiling, the 11.1 psia cutoff is intended to keep a source storing liquid stock with a high TVP from using a floating roof. Keep in mind that the 11.1 psia cutoff is the maximum monthly true vapor pressure as opposed to Reid vapor pressure (RVP), which is the vapor pressure of a liquid measured at 100°F. So do not be confused into thinking that if you have tanks that store 11 RVP gasoline, you must use a control device instead of a floating roof.

5. Question: Clarify that the gaseous streams from storage vessels that are routed to fuel gas streams qualify for performance testing, monitoring, recordkeeping, and reporting (MR&R), etc.

Answer: Storage vessels that have their gaseous stream routed to a fuel gas stream are not required to do performance testing, MR&R, etc. Section 63.646(b), the Refinery MACT storage vessel provisions, indicates that the definitions in §63.641 take precedence over the HON definitions (§63.119). In §63.641, a closed-vent system, by definition, excludes the plant fuel gas system. The 6/12/96 corrections add an exemption {63.640(d)(5)} for all emission points routed to a fuel gas system.

6. Question: When would a new tank receiving HAP be required to meet new source MACT Standards? Only at a new refinery?

Answer: Yes. A new tank installed at an existing refinery is not a new MACT source. The tank is not subject to the new Refinery MACT standards unless it is built at a new refinery. However, the tank is subject to the NSPS requirements in 40 CFR 60, Subpart Kb.

7. Question: Does the EPA agree that the Refinery MACT rule does not preclude internal inspections being made by entering a tank in service and inspecting the floating roof from the top side (implying no degassing of the tank prior to inspection)?

Answer: Nothing in the Refinery MACT precludes internal inspections from being made by entering a tank in service and inspecting from the top side of the floating roof. There may be an assumption that you would only perform the internal inspection when the tank is out of service, but if the source intends to keep the tank in service for 10 years and does not plan to take it out of service, the source is still required to do an internal inspection. Keep in mind that there is a safety consideration, since the tank is considered a "confined space." Therefore, you will have to follow Occupational Safety and Health Administration (OSHA) procedures for entering a confined space.

8. Question: If a storage tank is degassed on 8/16/98 pursuant to a routine maintenance schedule, and maintenance is not completed by 8/18/98 (initial compliance date), must the storage tank be in compliance at completion of these maintenance activities? The rule (§63.640) says that tanks must be brought into compliance at the "next degassing."

Answer: The clarifications published 6/12/96 stipulate that a floating roof storage vessel shall be in compliance "at the first degassing and cleaning activity after August 18, 1998". While this could be construed as the first degassing initiated after 8/18/98, a more conservative interpretation would be the first time that the tank is in a degassed and cleaned condition after 8/18/98. Under the latter interpretation, the tank in question would have to be in compliance at completion of maintenance activities that are in progress in 8/18/98. Note that for a fixed roof tank (no floating roof), it must be in compliance prior to 8/18/98.

9. Question: Assume that a tank switches between containing "Group 1" and "Group 2" liquids. Since "Group 1" liquids are in the tank, it is impacted by the Refinery MACT rule. However, what are the requirements for the tank when the "Group 2" liquid is in the tank?

Answer: There are not any expressed provisions for discontinuing "Group 1" requirements while the tank is in "Group 2" service in the Refinery MACT. However, §63.120(b)(1)(iv) in 40 CFR 63, Subpart G, which addresses resuming seal gap inspections when a tank is returned to "Group 1" service, does imply that while the tank was out of Group 1 service, it was not subject to the inspection requirements. Section 63.120(b)(1)(iv) says that "tanks ceasing to store HAP liquids meeting the Group 1 vapor pressure criteria for 1 year or more shall resume the compliance schedule of measurements within 90 days of returning to Group 1 HAPs service." That provision implies a discontinuation of "Group 1" requirements only by inference.

10. Question: Are underground storage tanks and bulk tanks provided by vendors considered storage vessels?

Answer: The definition in §63.641 says a "storage vessel means a tank or other vessel that is used to store organic liquids that are in organic HAP service." The definition does not make any distinction about whether the tank is an aboveground tank, an underground tank, or a vendor supplied tank. Therefore, if the tank is assigned to an affected unit and exceeds the "Group 1" cutoffs, then the tank is a "Group 1" storage vessel.

Additional information: Subpart Kb excludes

- vessel located at bulk gasoline plants,
- storage vessels located at gasoline service stations, and
- subsurface caverns or porous rock reservoirs.

11. Question: If a tank contains primarily an inorganic material or a material that does not meet the 4 percent HAP criteria (in other words, is not a "Group 1" liquid) but also contains a hydrocarbon layer which is a "Group 1" liquid, how does one calculate the TVP and HAP content to determine if the tank is subject to "Group 1" or "Group 2" requirements? Is the calculation based on the average of the total liquid contents in the tank or the average of the hydrocarbon layer that is on top of the liquid?

Answer: Stratification of a multi component liquid is not specifically addressed in the rule. It is a complex issue which does not have an intuitively "most stringent" resolution. For example, the top layer is the lightest and typically the most volatile component, but a heavier layer may have a higher HAP content.

Furthermore, if the top layer is a multicomponent hydrocarbon layer that is not very deep, it will experience significant change in properties as it weathers. This is part of the reason for tanks storing wastewater being governed by the wastewater provisions (where applicability is determined by concentration and flow rate) rather than under the storage tank provisions. The scenario raised in the question would typically fall outside the storage tank provisions of the Refinery MACT. In those infrequent cases where a tank subject to significant stratification is governed by Refinery MACT, there is no requirement to use anything other than the average properties in determining applicability.

12. Question: A facility has a storage vessel with a capacity greater than 177 cubic meters (approximately 47,000 gallons). The vessel currently meets the criteria for a Group 1 storage vessel. Could the facility limit the capacity of the vessel to less than 177 cubic meters in order to reclassify it as a Group 2 storage vessel, eliminating the applicability of control requirements and reducing recordkeeping and reporting requirements? Two options proposed for limiting the capacity of the vessel are: maintaining a daily record of the amount of material stored in the vessel to demonstrate that it is not being operated above the Group 1 applicability cut-off level; and installing an overflow line in the vessel which would limit the operational capacity of the vessel.

Answer: Although the Refinery MACT uses the term “design storage capacity” (DSC) in stating the size cut-off for existing and new sources, the term is not defined in the Refinery MACT. Review of previous EPA determinations of the definitions of storage vessel “capacity” and “design capacity” terms indicate that the following definition of storage vessel “capacity”, “design capacity”, or DSC should be used for NSPS part 60 subpart Ka and Kb storage vessel applicability determinations:

“Design capacity, as used in 40 C.F.R. Part 60 Subpart Kb and Capacity, used in 40 C.F.R. Part 60 Subpart Ka shall mean the internal cross-sectional area of a tank multiplied by the internal height of the tank shell and shall be reported in cubic meters. Operational restrictions such as design liquid levels and overflow valve heights shall not be a consideration in determining internal heights and shall not impact the calculations. The nominal capacity assigned by the tank manufacturer shall only be used to assess capacity or design capacity if a tank is not close to a size of regulatory concern.”

The above quoted size applicability criteria for storage vessels, possibly applicable to 40 CFR part 60, will also be used for 40 CFR part 63 subpart CC Group 1 storage vessel applicability determinations. According to the applicability criteria, the two options proposed for limiting the volume of the vessel are operational restrictions which should not be considered in determining design capacity. Therefore, neither of the two proposed options would allow a facility to reduce the design capacity of a vessel in order to alter the group status of the vessel.

13. Question: Is it true that the true vapor pressure (TVP) of the entire mixture in a storage vessel is used to determine whether the vessel is Group 1 or Group 2, but to determine whether or not a closed vent system and control device is required, only the partial pressure of the HAPs is considered?

Answer: That is correct. The applicability criteria for Group 1 storage vessels include the vapor pressure cutoffs of greater than or equal to 10.4 kilopascals (kPa) for the stored liquid maximum true vapor pressure and greater than or equal to 8.3 kPa for the stored liquid annual average true vapor pressure. If a vessel is determined to meet the criteria for a Group 1 storage vessel, emissions from the vessel must be controlled. If the maximum true vapor pressure of the total organic HAP in the stored liquid is less than 76.6 kPa, the vessel may be controlled using an external floating roof, and internal floating roof or a closed vent system routed to a control device or an equivalent control. If the maximum true vapor pressure of the total organic HAP is greater than or equal to 76.6 kPa, the vessel must be controlled with a closed vent system and control device or equivalent control.

14. Question: Should seal measurements be considered a maintenance activity? Secondary seals are not in compliance with gap requirements when they are temporarily pulled back during primary seal gap measurements.

Answer: The Refinery MACT references a provision of the HON that specifically exempts secondary seals from seal gap requirements while the seal is temporarily pulled back during primary seal gap measurements. Through a recent revision to the rule (63 FR 44135, August 18, 1998), this exemption has been extended to storage vessels that are subject to the Refinery MACT and 40 CFR part 60 subpart Kb and are complying with the requirements of subpart Kb.

15. How should the source monitor and document whether the level of the fuel in the storage tank is below the legs (e.g., 63.119(c)(3) & (4))?

Answer: There is no monitoring or recordkeeping requirement corresponding to the requirement in 63.119(c)(3) and (4). If this level is below the leg height setting, then the owner needs to comply with the applicable provisions of the rule. This is a common sense type of requirement that the roof only be resting on its legs if empty (i.e. during initial fill, after being emptied and degassed or before being refilled after being completely emptied). If the roof continues to rest on its legs after being filled, the liquid would lie ON TOP of the roof, which of course would be a violation. The Person filling the tank should be able to insure that this requirement is met.

16. What is the difference between nominal tank diameter and tank diameter pursuant to 63.120(b)(4)?

Answer: There is no difference between nominal tank diameter and tank diameter in 63.120(b)(4).

17. What does "emptied" mean as in 63.119(c)(3) and 63.646(a)? Does this mean no product in the tank or that the source is unable to pull product from the tank? How many days does a tank need to be empty to be "emptied" if the fuel level drops on a regular basis because of high throughputs/turnovers?

Answer: Emptied means the tank has no more product in it except for wall clingage or pools due to tank bottom irregularities. There is no set number of days that a tank must be empty to be "emptied". If it meets the definition of empty (no product except wall clingage and pools due to bottom irregularity) then it is empty, period.

18. For older tanks, how do we determine the recommended setting for pressure if there is no existing documentation and the manufacturer is out of business (e.g., 63.646(f)(2))?

Answer: Paragraph 63.646(f)(2) addresses the need of rim space vents to open in certain situations, like when a floating roof is being floated to release the gas beneath the roof and primary seal. The setting at which the rim space vent opens is more dependent on the need to vent the gas beneath the floating roof than the specific manufacturer's recommended setting. Therefore, the pressure settings of other similar devices should suffice to determine the necessary setting for a vent for which no information is available.

19. What is your expectation for companies to maintain required records for emptying and refilling tanks as in 63.119(c)(3)?

Answer: Section 63.119 does not require records be kept in such situations.

SECTION 4

PROCESS VENT CONTROLS

1. Question: Can a process vent be routed to a new source performance standard heater firebox without additional monitoring, for example SO₂ stack monitoring, if the fuel gas is already monitored for H₂S content?

Answer: There are no requirements in the Refinery MACT Rule to monitor for H₂S. However, you should check your local and State agencies to find out if they are going to make you monitor for SO₂ when you add that extra vent. This will be an issue that is driven by new source performance standards, and not by Refinery MACT. There are no requirements in Refinery MACT for you to monitor anything in the stack of a heater or boiler. You monitor the temperature in the firebox if the boiler or process heater has a design capacity <44 megawatts and the vent stream is not introduced into the flame zone. So Refinery MACT will not require you to do that, but I do not know for sure the answer to that for new source performance standards.

2. Question: If a steam eductor is used strictly for startup, is the eductor excluded?

Answer: Yes, startup vents are specifically excluded from Refinery MACT.

3. Question: Would FCCU reciprocating compressor vents that are piped to a steam eductor vent pipe be considered a process vent? (Assume the VOC emission rate is over 72 pounds per day).

Answer: In that case, yes, it is. If the FCCU's continuous vent releases to the atmosphere, the vent is one of the specifically listed vent streams. At that emission rate, you would probably have to route the stream to a control device.

4. Question: Are there any requirements to monitor flow from process vents routed to a control device?

Answer: No, the only requirement for monitoring flow is if the control device has a bypass stack. You either have to monitor for flow in the bypass stack to prove there is not any flow, or you have to close the bypass stack car-seal and monitor that the seal is locked shut so that any flow cannot bypass the control device. There are no requirements to monitor flow in any of these control devices unless you propose that as an alternate method of control.

5. Question: Are process vents from Remediation or recovered oil systems at refineries covered by the MACT requirements in process vents?

Answer: The Refinery MACT Rule was written to apply to refining operations and production activities. The rule does not address process vents for activities such as Remediation. For example, process vents for recovering subsurface hydrocarbons and separating the hydrocarbons at the surface would not be covered by the MACT rule.

6. Question: In the examples provided, please confirm that process vents are not open pressure relief valve vents. What controls does Refinery MACT impose on open pressure relief valve vents?

Answer: If you are talking about the vent that is sitting on a distillation column designed to keep the unit from exploding when the pressure has been exceeded, the rule does not apply. However, if you are talking about a vent that sits on top of the reactor and controls the pressure of that operation by periodically discharging to the atmosphere, then there is an argument that the vent is a process vent. If you are talking about the real safety valve, that is covered by the leak detection and repair portion of the Rule, which basically requires you to monitor it within so many days of the vent lifting. But if you are talking about those things that are fairly predictable in relieving, if it has more than 20 parts per million and meets the mass loading criteria in the rule, it probably is going to be considered a process vent.

If the tank is controlled by being routed through a closed vent system, it may be advisable for safety purposes to put a pressure relief vent on the tank. If that pressure relief vent is set at a higher setting than the normal operating flow through the closed vent system and it is only on there for safety purposes, it would fall under that same exemption as a safety device. But there is a requirement that the fixed roof be inspected, so the closed vent should be closed tight enough to not exceed the 500 ppm sniffer inspection that is required.

7. Question: What about seal pots (the pots that are associated with overhead accumulators)? They are actually a type of pressure relief device by holding back pressure by the liquid itself. They possibly could detain material that it is holding back, like gases. Assuming that the vent exceeded the minimum HAP release rate, would it be considered a process vent coming out at the top of the car-seal because it is probably continuous?

Answer: Yes, if the vent meets the 20 parts per million concentration and the 72 pounds per day mass rate.

8. Question: Why are larger process heaters presumed to be better at HAP destruction than smaller heaters (that is, less than 44 megawatt heaters)? If the reason is residence time, is there a method to “certify” smaller heaters as having a residence time greater than or equal to 0.5 seconds so that smaller heaters could be used for HAP destruction without performance testing?

Answer: The cut between process heaters greater than 44 megawatts and less than 44 megawatts is based on data that were collected in the late 1970’s and early 1980’s, by the EPA’s Office of Research and Development (ORD) and a FACA committee involving industry representatives. The ORD’s (and the committee’s) data showed a strong statistical relationship for controlling HAP’s when considering the combination of the turbulence in the combustor and the residence time. From these data, they could make a break at 44 megawatts.

Anytime you do this sort of analysis, somebody could have made a judgment call at a different point. But regardless of arguing about the old data and whether or not it is relevant today, it is important to look at the definition of “flame zone” in the Rule, because this restriction is not terribly limiting. If the vent stream is introduced into the flame zone, there is no requirement to do any performance test. The EPA worked

with Exxon and the API committee on clarifying that definition so it would not be interpreted as requiring you to fire this process heater or boiler exclusively on this vent stream. As long as the vent stream is directed into that flame zone, that is sufficient. You do not need to do a performance test.

When we were writing the Rule last year, we thought that with this revision to the wording, very few process heaters were going to be subject to performance testing.

9. Question: If an accumulator overhead goes to the fuel gas compressor, what normally happens when the fuel gas compressor goes down?

Answer: Equipment failures should be accounted for and included in a source's start-up, shutdown, and malfunction plan (SSMP), which is part of the source's Title V permit. The SSMP should give the source some form of protection from having to report equipment failures as a violation of the process vent standards in the Refinery MACT rule.

10. Question: For a stream to be fed to a boiler as fuel and not subject to process vent monitoring, etc., does the stream need to meet specific criteria (e.g., heating value)?

Answer: Any stream that is sent to the fuel gas system is not a process vent and exempt from all requirements of the MACT rule. Any stream sent to a heater/boiler larger than 44 MW is subject to the rule but is exempt from all monitoring and recordkeeping requirements of the rule, and any stream introduced into the flame zone of any heater/boiler is also exempt from these requirements.

11. Question: For process vent flares, what is your experience with pilot monitoring via thermocouples? What type of continuous monitoring system would you recommend?

Answer: Our experience has been that thermocouples burn out in about 3 months. We are looking at alternatives such as infrared monitoring.

12. Question: For a miscellaneous "Group 1" process vent, is the applicability of 33 kg per day and 20 parts per million by volume (ppmv) based on actual emissions or potential to emit?

Answer: The concept of "potential to emit" applies to the major source determination, but the 20 parts per million/33 kg per day figures are based on actual emissions. The source needs to determine if its vent would exceed those limits under any possible circumstances. Remember, there are requirements in the Refinery MACT rule for you to make the determination. If the source exceeds those limits because of process changes, it will have to reclassify the vent from "Group 2" to "Group 1."

13. Question: Where is the breakover between delayed coker process vents requiring control and not requiring control? Is it the 72 pounds per day exemption level?

Answer: Coking vents associated with coke drum depressuring at or below a coke drum outlet pressure of 15 pounds per square inch (absolute) as well as deheading, draining, decoking and pressure testing after

decoking are not, by definition, miscellaneous process vents. They do not require control. Other coking unit vents are required to be controlled if their HAP concentration is greater than or equal to 20 parts per million (by volume) and their volatile organic compound emissions are greater than or equal to 72 pounds per day.

14. Question: Is a process vent exempt if it is routed to another process, such as a feed drum or another accumulator?

Answer: Yes, unless the vent eventually releases to the atmosphere. Remember that a process vent is defined as "...gas streams that are discharged directly to the atmosphere, gas streams that are routed to a control device prior to discharge to the atmosphere, or gas streams that are diverted through a product recovery device prior to control or discharge to the atmosphere." Therefore, if a vent eventually releases to the atmosphere, it is a process vent. But if the vent is routed to another process, the intent was for the vent to be treated the same as fuel gas.

15. Question: If the vent is routed to a vapor recovery system which eventually goes through the refinery fuel gas system, is that vent exempt?

Answer: Yes.

16. Question: Assume that a new "Group 1" miscellaneous process vent is added to an existing petroleum refining process unit, and no other change is made to the unit. Is the "Group 1" vent subject to new source or existing source standards? Would the requirements for the existing equipment be changed as a result of the new "Group 1" vent addition?

Answer: The "Group 1" vent would be subject to existing source MACT requirements unless the vent is major (>10/25 tpy) on its own, in which case it would be subject to the new source MACT standards.

17. Question: If a flare is used as a control device for a storage vessel, a process vent, or equipment leak, and the flare is in organic HAP service less than 300 hours per year, clarify that the flare is exempt from all Refinery MACT requirements.

Answer: The 300 hours figure was intended to apply to the process equipment. The flare itself is not a piece of process equipment. A flare is a control device which is used to comply with the rule's requirement for a piece of process equipment (e.g., a storage vessel or process vent). The question is "Is the flare being used to comply with the rule?" Section 63.640(d)(3) is not relevant. The flare may never be subject to the Refinery MACT requirements.

18. Question: A "Group 1" process vent is routed to a combustion device (heater) which meets the Refinery MACT rule definition of a "boiler." The process heater has a heat input design capacity greater than 44 megawatts. However, the boiler or heater is not part of the petroleum refinery (i.e., it is not under common control of the owner or operator), but is contiguous to the property. Clarify that there are no monitoring, recordkeeping, or reporting requirements for the third party boiler process heater.

Answer: If the process vent were under the source's control, then it clearly would not be subject to any monitoring requirements because its design capacity is greater than 44 megawatts. The Refinery MACT does not have any monitoring requirements for boilers greater than 44 megawatts (§63.644(a)(3)). It is safe to assume that the third party would not monitor also. This question presents an interesting legal question, although we did not receive any comments suggesting we address this situation in the Refinery MACT rule. A similar question was raised in another rulemaking, so we may be able to use a similar rationale to deal with this situation.

19. Question: Clarify that sewer vents and sump drains, that are not equipment leaks or process vents, are not subject to the Refinery MACT. (Vol. I, p. 103). Also, clarify that wastewater drains are not process vents.

Answer: Sewer vents and sump drains are not process vents. The definition of "process vents" specifically excludes sewer vents and sump drains. There is also a specific exclusion in the Refinery MACT for wastewater drains.

20. Question: At petroleum refineries, gas turbines are attached to waste-heat boilers or common electricity and steam generating devices. Such units are typically fired with petroleum refinery fuel gas, natural gas, or both. The gas from gas turbines is typically used to produce steam in the waste heat boiler. Clarify that a gas turbine generator is a boiler since it is an enclosed combustion device used to generate steam and does not require performance testing or monitoring/recordkeeping requirements if it is used to control a process vent.

Answer: A gas stream sent to the turbine is probably serving as fuel gas and, therefore, would be exempt from the Refinery MACT rule. However, this issue should be clarified with your permitting authority.

21. Question: The definition of "miscellaneous process vent" in the Refinery MACT (see 60 FR 43265) refers to a minimum organic HAP concentration of 20 ppmv. The definition of "Group 1 miscellaneous process vent" refers to a volatile organic compound (VOC) concentration of 20 ppmv and VOC emissions of 33 kilograms per day. Clarify whether the concentration and emission cutoffs are based on HAP or VOC for the Refinery MACT.

Answer: There was a correction to the Refinery MACT on June 12, 1996 (61 FR 29876) stating that the concentration and emission rate are based on organic HAP rather than total VOC.

22. Question: When an overhead stream containing HAP is routed to a fuel gas system which is combusted in a boiler or heater, is the boiler or heater considered a control device or process equipment?

Answer: If the overhead stream feeds to the fuel gas system, which is combusted in a boiler or heater, the boiler or heater is considered process equipment, which is not subject to monitoring requirements.

23. Question: When a process vent is routed to the firebox, not the fuel gas system of a boiler or heater, is the boiler or heater considered a control device or process equipment?

Answer: The boiler is not considered a control device and is not required to be monitored if it has a design heat input capacity greater than or equal to 44 megawatts. It is only considered a control device if it has a design heat input capacity less than 44 megawatts.

24. Question: Is routing a miscellaneous vent gas stream to an additional burner dedicated for that purpose considered introducing the vent stream into the flame zone?

Answer: Yes (probably). The most likely location for a burner would be in the flame zone of the firebox.

25. Question: Is Method 22 actually required for flares serving process vents? In §63.645(a), it says that for demonstrating compliance with the process vents regulations, §63.116 should be followed except for §63.116(a)(1), etc. It is in §63.116(a)(1) that Method 22 is referred to. Does this mean that refineries using flares to comply with the process vent requirements do not have to use Method 22?

Answer: The rule does require Method 22 to be used, although it is in an indirect manner. It is required through §63.645(i). It is possible that §63.645(a) excludes §63.116(a)(1) because paragraph (i) of §63.645 requires Method 22 testing for visible emissions. In this rule the requirement for no visible emissions is only associated with flares. It is likely that §63.116(a)(1) was excluded because the requirement is already contained in §63.645(i).

26. Question: One facility uses a flare as a control device for process vents that are released to the flare only in emergency situations. Should the facility test during normal conditions, which in this case would be with no process vent gas venting to the flare since it is only used for emergencies, or would they be expected to send the process vent gas to the flare just for the test? Additionally, the facility was planning to test the "sweep gas" that runs through the flare system rather than the process vent gas for Btu value as required in §63.111(b)(6). The company insists that the "sweep gas" has a lower Btu value than the process vent gas, which is the limiting factor in §63.111(b)(6), but it isn't necessarily the gas that's being regulated under the rule. Is it acceptable for the facility to test the sweep gas if they can justify the claim that the Btu value is less than the process vent gas, or should they be testing the process vent gas because that is what is regulated under the rule?

Answer: It seems that the facility could test at normal operating conditions and use the Btu value of the "sweep gas". This answer is based on §63.643 (a)(1) which specifies that the flare has to meet the conditions of §63.111(b). Thus, it is basically a design or equipment standard. The rule also requires that testing shall be conducted under maximum representative operating capacity for the process and that the operator may test the control devices at maximum or minimum representative conditions, whatever results in lesser emission reductions (see §63.642(d)(3)). If the facility can show that "sweep gas and the process vent stream" is approximately the same as "sweep gas" alone or that "sweep gas" alone would cause poorer destruction efficiency in the flare, then it seems that the rule would allow them to test with sweep gas. The facility would likely need to show by calculation that both the minimum Btu condition and the maximum flowrate condition would not be adversely affected.

Another approach would be for the facility to argue that they don't have to demonstrate that the flare with process vent gases meets the requirements of §63.11(b) because the process vent is routed to this flare only during periods of startup, shutdown, or malfunction. The facility may be able to include venting to the flare as part of their startup, shutdown, malfunction plan (SSMP) required by the General Provisions. The facility would then be obligated to follow good practices and attempt to minimize emissions.

27. Question: For which process heaters and boilers are performance tests required if process vents are routed to them?

Answer: Performance tests are required for process heaters and boilers used to control process vents if they have a capacity less than 44 MW (150 Btu) and the vent(s) is not introduced into the flame zone. If the capacity of the boiler or process heater is equal to or greater than 44 MW or all vents are introduced into the flame zone, a performance test is not required.

28. Question: When can means other than stack testing be used to demonstrate compliance with the process vent requirements?

Answer: As discussed previously, performance tests are required if a process vent is routed to a boiler or process heater with a capacity less than 44 MW and the vent is not introduced into the flame zone. This performance test must show that HAPs are reduced by 98 percent or to a concentration less than or equal to 20 ppmv. A similar performance test is required if a control device such as an incinerator is used. Testing is also required if the process vent is to be controlled with a flare to ensure that the flare complies with the requirements of §63.11(b). This includes design measurements and calculations and a visible emissions test rather than percent reduction or outlet concentration testing for flares. Stack testing may be used to determine if a vent meets the criteria for Group 1 process vents, or this determination may be made based on engineering judgement.

29. Are the total organic HAP emissions reductions in 63.119(e)(1)&(2) required for flares, assuming the flare is in compliance with 63.11(b)?

Answer: No. In 63.119(e)(1), we explicitly state that if a flare is used as the control device, the requirement is for the flare to meet the requirements in 63.11(b). In other words, it is a separate requirement for flares from other types of control devices. Thus, there is no requirement to demonstrate 95% removal. If a flare meets the specifications in 63.11(b), we estimate that the flare will achieve 98% control. There is no way to use the regression equations in 63.11(b) to specify a 95% efficient flare.

Flares are not addressed in 63.119(e)(2) because that paragraph concerns a grandfather provision for devices that do not meet 95% removal. We did not include flares in that paragraph because the issue arose for condensers and adsorbers. The effect of the rule language is to exclude flares from the grandfather provision in 63.119(e)(2).

LEAK DETECTION AND REPAIR

1. Question: Must a source have prior written EPA approval before opting to use the MACT NSPS LDAR Skip Monitoring provision citation or must the source simply document the percentage leakers?

Answer: My interpretation is that you are not required to have prior written EPA approval. If you state in your compliance demonstration document that you performed your initial monitoring, showed your compliance demonstration, and then showed your percent leakers, you can continuously document through the semiannual reports your percent leakers and your monitoring frequency. You may want to make reference to your monitoring frequency in this report. However, keep in mind that under Title V if you change the frequency of your monitoring, that might be construed as a modification unless you wrote your Title V permit initially specifying that you are going to be using NSPS LDAR Skip Monitoring Provisions as your compliance option and that you will be using alternating monitoring frequencies depending on the percent leakers that you demonstrate. Plan ahead of time how you are going to be using the skip monitoring, because otherwise it could be interpreted that you are reducing your monitoring frequency which requires a Title V modification.

I recall that the NSPS requires a notification to the State or the Regional office that the source is changing to this frequency. I do not remember if that requirement was taken out of the Refinery MACT standard or if they still have to send in a notice saying that this change is being made. It might be able to be included with the semiannual report. And just in case you have not been NSPS monitoring, the semiannual reports that I have seen from facilities subject to the Benzene Equipment Leaks NESHAP (40 CFR 61, Subpart J) and almost every piece of information I have from the chemical industry shows that most people are qualified for annual monitoring after a year or so. So you would want to plan ahead to be able to use less frequent monitoring.

2. Question: Can you use existing leak monitoring data to qualify for less frequent monitoring of valves?

Answer: Monitoring data from previous LDAR programs for valves generated before August 18, 1995 can be used to qualify for less frequent monitoring of valves under the Refinery MACT. In order to be used, the monitoring data must have been obtained from LDAR monitoring procedures stated in 40 CFR 60, subpart VV, §60.485(b) or 40 CFR 63, subpart H, §63.180(b)(1) through (b)(5) or procedures that include only minor departures from those in 40 CFR 60 subpart VV or 40 CFR 63 subpart H.

3. Question: Can you select the NSPS or modified HON method by process unit, or must you use only one method for the entire refinery?

Answer: I think we discussed this question at length as the Rule was developed and the conclusion was that you would be allowed to use the NSPS method on one unit and the modified HON method on another unit. Therefore, both methods can be used for different pieces of equipment at a refinery; however, using both methods would make the monitoring program more complicated.

4. Question: Can a leak repair be checked by Method 21 instead of soap bubbles?

Answer: Yes. The idea of using the soap bubble method was for people who do not want to use Method 21 just to check the effectiveness of repair. The soap bubble method was viewed as a quicker method to use than Method 21.

5. Question: Will South Coast AQMD Rule 1173, which is a VOC rule for equipment leaks, satisfy the alternative standards for MACT equipment leaks?

Answer: Yes and no. Yes, because Rule 1173 has broader coverage because it is a VOC rule. However, no, because Rule 1173 may not apply to streams that have 5 percent HAP, because the HAP may not be VOC. Also, Rule 1173 does not contain some of the provisions of the Federal program. Please note that the Western States Petroleum Association is currently undertaking a project to compare the petroleum industry final MACT rules (i.e., the rules for refineries, the gasoline distribution sources, and marine vessel loading) to the California VOC control technologies to see where the rules mesh and where the gaps are.

The Health and Safety Code in California was modified such that all the MACT rules that are promulgated by the EPA automatically become "California Air Toxics Control Measures" to be enforced by the districts directly without the districts having to adopt the measures. So once a MACT rule is final, the districts automatically have the authority to enforce it.

This approach is also being considered for other areas of California and there is a task force that is working in California with Region 9 and the State to try to work through some of the issues of delegation of the Air Toxics Program and meshing the Federal Air Toxics Program with existing local district rules.

6. Question: Are there any requirements or standards for drains under the MACT rules?

Answer: There could be some confusion because of the terminology. Drains are not regulated under the Federal equipment leak rules. Those rules, as drafted, refer to specific pieces of equipment and drains are not one of them. Regulated equipment includes pumps, valves, compressors, etc. As far as the Federal rules are concerned, these rules apply primarily to losses of process fluids through seal losses.

However, some programs may refer to drains as being sources of fugitive emissions. For example CTG's generally refer to drains as equipment leaks. As a result, some States have adopted drain requirements under their fugitive emissions rules.

Some of the old CTG's are out-of-date and the EPA has no mechanism for withdrawing something like that. People looking at something from 1977 or 1978 need to ask themselves, has there been a subsequent document issued by the Agency that in essence overturns what was in that document? In the CTG for equipment leaks (EPA-450/2-78-036, June 1978), there is a lot of material about leak detection and repair on compressor seals. There is no point in sending people out to monitor compressor seals on a quarterly basis. With many of the old documents, you need to evaluate whether their requirements make sense in light of subsequent rules and documents.

State regulators have difficulty finding the initiative, time, and resources to go through and make such changes. For years, States have been developing rules based on those old CTG's, and I hope they are being updated to reflect current information.

7. Question: Which document contains the latest leak emission factors and correlation equations?

Answer: The latest leak emission factors and correlation equations that were fully reviewed and approved by the EPA can be found in the "Protocol for Equipment Leak Emission Estimates", EPA-453/R-95-017, November 1995, which was placed on the bulletin board in February of 1996.

The API is developing a two-part document that provides guidance on how to perform the emissions monitoring and how to use the equipment leak data. The API document also quotes all the new leak emission factors and correlation equations as they pertain to the petroleum industry. The API document will contain new emission factors for heavy liquid service in refineries. These factors have not yet been fully reviewed and approved by the EPA. The API has not revised the emission factors for refineries, just the correlation equations. The emission factors have been revised only for gasoline marketing and for exploration and production operations. There is no requirement for leak detection and repair for equipment in heavy liquid service in refineries and, therefore, there is no way to generate the screening data that is required to use the correlation equations. Therefore, API has developed a new data set and new emission factors. These new factors have not been reviewed or fully approved by the EPA, but will appear in the API guidance document. So maybe by the time the API guidance documents are issued, the EPA will already have a chance to look at these new data. If you need emission factors right away, the data that appeared on the TTN bulletin board in February of 1996 are the best to use at this time.

8. Question: Which reference instruments are approved for leak detection testing?

Answer: There are no reference instruments approved specifically for leak detection testing. The EPA uses Method 21 (40 CFR 60, Appendix A) as a reference method, which has performance specifications that the instruments must meet in order to be used when conducting this Method. If an instrument meets the performance specifications of Method 21, that instrument is approved for leak detection testing. The API document will also specifically highlight those requirements and may compare a few of the most prevalent instruments on the market.

9. Question: In order to fix a valve, one must flare gas that incidentally contains sulfur compounds and produces SO₂ in quantities exceeding the amount of VOC produced by the leak. When deciding whether or not emissions from repairs will exceed emissions from leaks (in the context of the justifying the delay of repair), are pollutants other than VOC taken into account?

Answer: The Refinery MACT is not a VOC rule but a HAP rule, so the emphasis should be on the volatile organic hazardous air pollutants when deciding whether the emissions from the leak exceed those that might be controlled by repairing the leak. The analysis of net emissions should be volatile organic hazardous air pollutants-based and not criteria pollutant-based (SO₂ or VOC).

10. Question: Regarding the Subpart VV, MACT, NSPS choice, are pressure relief vents (PRV's) subject to non-detect limits less than 500 ppm if connected to a closed vent system or fuel gas system?

Answer: The EPA specifically stated in the definitions for the Refinery MACT Rule that the fuel gas system is not a control device. Therefore, all the piping and the ducting that goes into the fuel gas system is not a closed vent system. Therefore, if it is not a closed vent system, it is not subject to the closed vent system requirement. However, if the PRV's are routed by a traditional closed vent system to something other than a fuel gas system, then that closed vent system could be subject to the non-detect limit (<500 ppm).

When we prepared the Refinery MACT Rule, we also amended Subpart VV. If you use hard traditional ANSI piping, that is not subject to anything but a one-time check.

The Refinery MACT rule distinguishes between ducting and hard pipe systems, and has different monitoring requirements for each type of system. You should look at the definitions carefully, because the EPA has made an effort to minimize the burden of the closed vent system requirements by delineating what is a ducting system.

11. Question: Is leak monitoring required under either NSPS or SOCOMI HON MACT options for negative pressure systems?

Answer: No. Monitoring is not required for vacuum systems.

12. Question: Is the refining industry required to test all streams for HAP content? In our refinery we have limited analysis for HAP contents on various streams.

Answer: The requirement is to apply leak detection and repair for all streams that contain over 5 percent HAP. If you want to exempt a stream, you have to demonstrate that it could never be above 5 percent HAP on an annual average basis. So one simple answer is you do not need to know what the HAP content is if you are willing to do the leak detection and repair program on all the streams and assume that any one of them or combination of them can at any time be over 5 percent HAP. Otherwise, analysis is required unless you can show by engineering judgment that you can account for at least 98 percent of the species in the stream of interest.

13. Question: How are instrument systems regulated under the equipment leaks provision (i.e., sight levels, sight glasses, and meters)?

Answer: The answer is unclear because we coined a term "instrumentation system" that is used in Subpart H to deal with collections of small valves and connectors, etc. to provide a more practical way to deal with such items. Regarding sight levels, sight glasses, and meters, I do not think such items are covered under any rule. However, any valves and connections associated with those items would be covered. Therefore, Subpart H, Subpart VV and all the older equipment leak rules basically treat all valves and connectors equal regardless of size.

14. Question: Do sight, smell, and sound inspections, and the weekly visual inspection for dripping pumps, require written documentation? Could this be encompassed in the operator's duties without requiring documentation?

Answer: The operator should have a complete list of the components that need to be inspected, and there should be a system of check marks to show that they have checked each component and whether or not it was leaking. It does not have to be a separate person and it does not even have to be a separate form, but it has to be an identifiable item on an operator's log.

15. Question: A pump is tested and found to be leaking on day 0. On day 10, the pump is isolated from the process and the pump is sent offsite for repair. The repaired pump is placed back in service on day 20 and found to still leak (the offsite repair failed). Is this considered an automatic violation? Did the 15-day clock stop on day 10, the day the pump was isolated, and then restart on day 20, the day the repaired pump was placed back in service, or is this a new leak?

Answer: I do not want to make technical compliance judgments for other companies, but I would say that on day 10 when you isolated the pump from the process and removed it from service, that you fixed the leak that you found on day 0 (because you removed the leaking component). If you had a spare pump, maybe you put that pump in service or perhaps you isolated that whole part of the process so that you did not need to use a pump. When you returned 10 days later with the pump and installed it, for all practical purposes it could have been the same pump or a similar pump that does the same service. In my judgment, I would call this a new leak and not an automatic violation. One of the reasons the EPA has required the quality improvement program if you have more than 10 percent of the pumps leaking is just because of cases like this. They want to ensure that once you repair a pump, you test it somehow offline before you put it back into the process to ensure that the repair was successful. If the repair was not successful, you should try to analyze the nature of the repair in terms of what made it leak again so soon.

16. Question: Has the EPA required that foam be injected into a valve to repair a leak rather than wait until the next shutdown? Apparently, this is a common practice in some local districts for safety reasons. However, it evidently ruins the valve since you have to drill a hole to inject the foam.

Answer: The EPA has never required foam injection for repairing equipment leaks. The rules specify that there has to be a first attempt at repair within a certain time period, but do not specify what the mechanism of the repair should be. In some areas where there are strict leak detection and repair programs and leaking components are an automatic violation if not repaired within 24 hours, some people have used foam injection to repair leaks. This practice is not required by the EPA.

17. Question: If you opt to use the modified HON option for LDAR under Refinery MACT instead of the NSPS option, and you have an existing NSPS program at a unit which contains some streams having less than 5 percent of the Table 1 HAP, do you need to monitor this unit for VOC in accordance with NSPS or the applicable State regulation?

Answer: First, remember that the LDAR provisions of the Refinery MACT Rule apply only to streams that have greater than or equal to 5 percent of the Table 1 HAP. There is no Refinery MACT LDAR

applicability for streams that contain less than 5 percent. Any NSPS or State regulatory requirements applicable for the control of VOC are independently applicable to those streams. You do not have to worry about MACT and you do not have to worry about the interaction.

Second, if the NSPS catches some VOC streams that also contain greater than or equal to 5 percent of Table 1 HAP, then the modified HON option can supersede that requirement. However, I am unclear about whether the modified HON MACT option can supersede a State RACT based requirement to effect the control of VOC. I would assume that the State would be amenable to that because the EPA has made a strong case in the MACT Rule that the controls for Refinery MACT are more stringent than most other programs, but that could be a case-by-case determination.

18. Question: The equipment leak provisions require that open-ended lines be plugged, or at least capped. Someone had an audit and found a drain at the base of a pump which, according to their auditor, should have been plugged. The drains that they have on this pump are used to drain water off the pad or the pump to the sewer; or in the case of a seal failure, any accumulated liquid could be drained. Does this drain meet the requirement to be plugged or capped?

Answer: I am unclear about the phrasing, "could be drained." If this drain is used only for draining rainwater off the base of the pump, I would say "no," it should not be considered to be subject to the rule. The purpose of the equipment leak provisions is to control emissions that would result from losses of process fluids, and that would not be process fluid. Thus, it is unclear whether or not the drainage of the seal would be subject to the rule. Enforcement people may argue that it would be subject, because the drain is used to drain a seal fluid leakage. But because of the phrasing about "could be drained," it sounds like it has some pluggage that, if it is open, it is going to drain.

The drain's applicability may depend on the type of fluid in the seal. Is it water? Is it a water seal? And if in that case you noticed drainage, that would be indication of liquid dripping and you would just institute a program to repair that pump seal.

I would say that those things should not have to be plugged, but Subpart VV may not be clear on this point. In Subpart H, I believe we have made it very clear that drains of that type are not subject to those requirements. This drain does not sound like it is typically in process fluid service. The other thing to consider is the applicability of Subpart CC where it is clear that equipment has to be in HAP service at least 300 hours per year. Are you going to have a pump seal failure for that duration?

The open-ended line provision is required because years ago it was common to have a sample valve available to pull a sample off the stream -- maybe not routinely, but occasionally. The valve was located on an open pipe at one end and so anything that was inside that pipe evaporated. And the idea was, "Don't let that stuff sit there and drain." And if you go back to the original record of the equipment leak provisions, you'll see how they calculated emissions. They took some representative size of the volume of the types of lines that they were observing in refineries and chemical plants and assumed it was full of fluid and that it came out over some time period. The intention of the open-ended line provision was to avoid evaporation losses of residual material clingage in those pipes which are used for sampling or some other purposes.

19. Question: What is the different impact in the two equipment leak subgroups (e.g., Phase I, II, and III of the HON and NSPS provisions)?

Answer: The Phase I, II, and III provisions are the new provisions that allow more flexibility in monitoring, but they have a lower leak definition. The NSPS provisions have a higher leak definition, but require with more frequent monitoring initially.

20. Question: Please clarify whether connectors should be monitored under Subpart VV or Modified Subpart H (HON)?

Answer: You have an option under the new provisions in Subpart H to monitor connectors. If you choose that option, you get a higher performance standard for valves. Connectors do not have to be monitored unless you want the higher performance standard for valves. However, under Subparts VV and H, you would still have to perform the sensory detection (e.g., sight, sound, or smell) monitoring for leaks. So unless you elect the option to monitor connectors, you only have to perform the sensory detection.

21. Question: If a piece of affected equipment is in liquid service with ≥ 5 percent HAP but is not a light liquid, what monitoring is required under Refinery MACT (all ≥ 5 percent HAP liquids may not be light liquids)?

Answer: If the liquid has more than 5 percent HAP, but is not considered a light liquid, then the liquid is considered a "heavy liquid." Equipment handling "heavy liquids" is subject to the same sensory monitoring (e.g., sight, sound, or smell) as connectors.

22. Question: If a refinery opts to use the NSPS for equipment leaks and then adds on some new process units, would those new units have to comply with the negotiated leak provision which is the Modified HON or the NSPS?

Answer: It is unlikely that an existing refinery will trigger the new source Refinery MACT requirements. Remember that the source, in the broadest sense of the definition, is the whole refinery. The source is not the individual valve or the individual component being replaced. However, for a new valve, new pump, or a replaced flange, all you would have to do is summarize the changes that you made in your equipment in your next semiannual report. These new equipment pieces will be subject to the existing source provisions. The only instance where the new provisions of the Modified HON are required is if you construct a new process unit that meets the new source definition.

23. Question: In the NSPS Alternative Standards, if a facility has over 2 percent leakers (for equipment components), the facility is in violation of the standards. How many violations, one or the number of valves leaking greater than the 2 percent threshold?

Answer: First, a facility cannot be in violation on a per-valve basis of the 2 percent standard because the 2 percent value is calculated over the population of valves that the facility elected to use in its compliance

program. If the facility elected to use the entire population of valves at the refinery to comply with the 2 percent NSPS option, then the 2 percent value is calculated based on the tens of thousands of valves that are at the refinery. If the facility elected to use a process unit to comply with the 2 percent NSPS option, then the 2 percent value is calculated based on the number of valves in that process unit. Although exceeding the 2 percent value is considered only one violation, the number of days of violation could be up to 1 year. That is, if a facility elected to comply with the 2 percent NSPS option, and its annual monitoring shows that it exceeded the 2 percent standard, the Agency may view that as being 365 separate violations.

The EPA does not think any source has ever elected to comply with the NSPS using the 2 percent standard. Also, remember that the NSPS has a skip period alternative that accomplishes the same thing but does not present the legal jeopardy.

24. Question: If the SIP requires leak detection and repair (LDAR) for a leak measured at 500 ppm, can the 500 ppm leak definition be substituted for the Refinery MACT?

Answer: There are provisions in the Refinery MACT for an alternative standard or an alternative emission limitation (§63.649). However, a facility must notify the EPA when wanting to use a different means of compliance. At that time, the source and regulatory agency could also consolidate the recording and reporting requirements through the source's Title V permit.

25. Question: The affected equipment for the equipment leak standards as defined in the Refinery MACT is valves, pumps, compressors, pressure release devices, sampling connection systems, open-ended valves or lines, and instrumentation systems in organic HAP service (per §63.641, Equipment leak). Subparts VV and H contain other standards for agitators, surge vessels, etc. Are these other equipment regulated under the Refinery MACT?

Answer: First, if a piece of equipment is not in the Refinery MACT's definition of "emission point" (§63.641), the piece of equipment is not subject to the Refinery MACT rule. Second, Subpart VV does not cover agitators. A recent revision to the Refinery MACT (63 FR 44135, August 18, 1998) clarified that agitators are not included in equipment subject to the equipment leak provisions of the rule. Subpart H covers agitators, surge control vessels, and bottom receivers, whereas Subpart VV does not. The Benzene Equipment Leak Rule (40 CFR 61, Subpart J) has the term "product accumulator vessel," which is not covered in the HON. It is exclusively covered in the Benzene Equipment Leak Rule. The EPA will have to resolve this disconnect. A facility is not subject to standards for agitators, surge control vessels, or bottom receivers through the Refinery MACT Rule. You may, however, have some obligations under the Benzene Equipment Leak Rule.

26. Question: To determine if equipment is subject to the Refinery MACT rule, where is the boundary drawn for a process unit? Are equipment leaks from outside a process unit (e.g., offplot and connecting pipeways) subject to the Refinery MACT?

Answer: If "offplot" means outside of the process unit boundaries, but within the source, the process unit and equipment is subject to the Refinery MACT. If "offplot" means the process unit and equipment are outside your source (i.e., not within the property boundary of the source), then the process unit and equipment are not subject to the rule. Currently, the EPA is considering additional provisions in the HON which will allow people to consolidate equipment to allow more efficient management for the data. The provisions have not yet been proposed; therefore, nothing is final at this time.

27. Question: Which regulation takes precedence or claims applicability between the SOCFI HON unit and the Refinery MACT units, such as in mixed aromatic streams between the reformer (refinery unit) and benzene splitter (SOCFI unit)?

Answer: Admittedly, where you draw the boundaries among these units is ambiguous. When we were developing the HON, we deliberately decided to allow flexibility regarding what equipment is to be regulated by which regulation to allow sources to allocate the equipment as they manage it. Also, different companies have different policies and/or approaches for managing equipment. We provided some allocation procedures for the big equipment. For the lines going between units, the main guidance we have been giving people is to apply the allocation procedures consistently. As long as you allocate equipment consistently we do not think you will have any problem in complying with the rule. You may have to work with your local enforcement agency to explain to them your methodology and rationale for allocating equipment. You will want to ensure that your regulatory agency agrees with your equipment allocation method. But there is no reason, as far as the Refinery MACT or the HON is concerned, that we should care whether or not you capture equipment under one rule or the other. Every company is going to want to allocate equipment in a way that makes sense with respect to their internal management, programs, and equipment.

28. Question: Once you are in Phase III of Subpart H, the Modified Equipment Leaks Provisions, can you go back to the NSPS?

Answer: Yes, but it will require a permit revision. There is nothing in the rule that precludes you from resuming NSPS monitoring and recordkeeping. However, some may consider revising the permit to be a lot of complication for a minor benefit.

29. Question: Can the EPA clarify who has to sign the "Need for Delay of Repair" for leaking components?

Answer: A recent revision to the rule (63 FR 44135, August 18, 1998) requires that the name of the person making the decision to delay equipment leak repairs be recorded instead of requiring a signature.

30. Question: Why does the NSPS not allow skip monitoring of pumps if they meet certain performance criteria (i.e., similar to the valve monitoring)? Can this be revised?

Answer: The skip program for pumps was introduced in the refinery rule as a result of discussions between API and the EPA during the development of the rule. Current data showed that there are facilities where

very few pumps were leaking, so the logical question was "Does it make sense to require monthly screening of each and every pump?" The NSPS was based on work performed in the late 1970*s, when mechanical packed pumps were more prevalent than centrifugal pumps. So at that time, the EPA thought it made sense to require monthly monitoring. Based on longer term experience with this program and new information, the EPA decided, through discussions with API, to see the public's reaction to allowing quarterly monitoring for pumps.

Please note that EPA does allow skip monitoring for pumps, but only if the modified Subpart H provision are selected.

32. Question: Does equipment have to be designed in a specific way in order to be classified as having "No Detectable Emissions" or can this just be verified by monitoring?

Answer: There are three criteria for determining if components can be classified as having "No Detectable Emissions." As stated in §60.482-2(e), et al. of 40 CFR 60, Subpart VV; first, the component has to have no externally actuated mechanism in contact with the process fluid. Second, the component must be operated with emissions less than 500 ppm above background. Third, the component must be tested for compliance with the 500 ppm limit initially upon designation, and then annually and at other times as requested by the Administrator. So a component classified as having "No Detectable Emissions" is not completely exempt from monitoring.

33. Question: Can a facility use both the NSPS and the modified HON at the same time?

Answer: Yes, if you are willing to try to keep track of two separate programs.

34. Question: Can a facility go back and forth on computing leakers based on process units versus the entire the refinery? For example, for the first quarter, use 2 percent leakers for process units, then the second quarter use 2 percent leakers for the refinery? Can the same logic be used for valves or pumps?

Answer: Yes, but once you start moving from the process unit-based standard to the refinery-wide standard, you would have to modify the permit. For the example given here, it is uncertain whether a facility could get its permit changed every quarter.

35. Question: Can a facility use different compliance methods within the same process unit (e.g., one for valves and another for pumps)?

Answer: No. Process units are the smallest size unit allowed for selecting compliance methods.

36. Question: If a vapor stream having less than 5 percent HAP results from a liquid flash, and the liquid is greater than 5 percent HAP, is this vapor stream a HAP fluid?

Answer: The 5 percent HAP requirement applies to the liquid in the line itself, not to the vapor stream emitting out of the leak. However, if the fluid inside the line has both vapor and liquid (i.e., a two-phase

flow), the fluid would be an aggregate of the vapor and liquid. Do not apply the 5 percent HAP criterion to each individual phase, apply the 5 percent HAP criterion to the aggregate mixture.

37. Question: For equipment leak options, what are the criteria for deciding between the NSPS vs. the Modified HON? Do you have any guidance and cost comparisons? What is the key?

Answer: Regarding cost, there is probably no one answer because cost depends on so many things, especially a facility's location. Obviously, there will be a big difference in compliance costs between a refinery in California and a refinery in an attainment area that does not have any programs to comply with other than NSPS.

The key as to which equipment leak option to select should be based on data (e.g., screening and monitoring results, regulations that apply, etc.). Performing screening and monitoring and knowing the existing regulations in your area is key, especially in locations that do not have any current monitoring programs. If you wait until 1998 when some of these dates apply to begin monitoring, you will never have the data you need to determine which equipment leak option is right for your facility. You should start gathering those data now, or as soon as possible, to understand what the ramifications are for complying with the different equipment leak options.

38. Question: Why monitor heavy liquid components at 10,000 ppm (NSPS) when maximum concentration can only be approximately 3,000 ppm (based on vapor pressure).

Answer: You do not have to monitor heavy liquid components using an instrument. The heavy liquid components require sensory detection where you either look or hear or smell for a leak. You only have to do the monitoring if you detect a leak.

39. Question: Why is the leak definition for control vent systems (CVS), pressure relief devices (PRD), and "No Detectable Emissions" not doubled to 1,000 ppm since most leak definitions are twice as high as SOCOMI HON (1,000 ppm versus 500 ppm).

Answer: The "No Detectable Emissions" definition is in many EPA regulations. This terminology is an artifact from the NSPS which was defined based on spanning the instrument maximum (100 percent) at 10,000 ppm and assuming "No Detectable Emissions" is no more than 5 percent of span (or 500 ppm). You can have a component meeting the "No Detectable Emissions" limit at another level if you spanned your instrument at a different concentration. Currently, the only place where the EPA is using this terminology is in the closed vent systems provisions in Subpart VV, Subpart GGG, and Subpart KKK.

40. Question: For random monitoring of 200 connectors, do you monitor the same 200 connectors at each monitoring event or do you select new 200 connectors for each monitoring event?

Answer: The emphasis in §63.649 of the Refinery MACT is "random 200." A facility definitely should not monitor the same 200 components each monitoring event. The same 200 components would not be a random selection. The frequency at which you monitor the components depends on your performance

standard as shown in the table associated with this option. The connectors should be randomly selected on a refinery-wide basis for each monitoring event.

41. Question: For monitoring, you are required to follow Method 21 to measure leak rates. Method 21 allows the use of alternative screening methods (e.g., a soap screening solution). Can you use the soap solution method first, as a screening method, and then if a leak is observed, use the monitor to give actual leak rates?

Answer: In principal, yes. However, in practice, the soap solution may foam up on high temperature components. In using the soap solution method, you may be doing twice the work by having to re-monitor with an instrument afterward.

42. Question: Can photoionization detectors (PIDs), which can only be calibrated with isobutylene (not methane), be used when the HON specifies that the calibration gas be methane?

Answer: Yes. Other screening instruments can be used, not just an organic vapor analyzer (OVA). But you should consider that whatever gas you are using to calibrate the instrument should be similar in content and concentration to the gas stream you are monitoring. Isobutylene may not be a proper surrogate for a BTEX (benzene, toluene, ethylbenzene, and xylene) mixture. In a refinery, the result may be more reliable if the PID is calibrated with a BTEX mixture. If you are using something like isobutylene, you may have to apply a response factor to translate the response from isobutylene which may not exist in the stream you are monitoring to a BTEX type stream for which the PID has a very high response. This type of issue will be addressed in more detail in future API guidance.

43. Question: According to Ken Garing of EPA's National Enforcement and Investigation Center (NEIC) in Denver, the EPA generally finds four to five times the number of leakers when doing LDAR inspections at refineries as refinery inspections teams do. Will the EPA be willing to participate in a round-robin leak testing evaluation program to resolve this discrepancy? (Vol. I, p. 195)

Answer: The EPA has done several audits of refineries in California and in the Midwest in which they found a higher leak rate than facilities have self-reported. As a consequence, the Office of Enforcement and Compliance Assurance and the EPA in Washington, DC is developing a guidance document for its own inspectors on how to perform equipment leak inspections. This guidance document is now in a draft form and going through internal review at the EPA. The API hopes to get involved with the EPA once that draft is approved for external review. At that time, we will try to resolve such issues.

The majority of the issues regarding the discrepancy in the leakage results were associated with the time that a facility inspector takes to monitor each component. Method 21 requires that you spend twice the response time on each individual measurement point, so when you are going through a leak interface, a 4-inch valve has quite a circumference to cover. If you are monitoring along the circumference in many locations, you have to make sure that you spend twice the response time of the instrument at each one of those locations, which is not a problem with the OVA or the PID because of their very fast response time (i.e., a few seconds). However, if you are using a TLV type instrument, which has a 20-second response

time, and you have to spend 40 seconds on each monitoring point, and you plan to monitor at four, six or ten points around a large circumference or large component, the monitoring time increases tremendously. As a result, EPA inspectors have submitted many comments regarding the monitoring time.

44. Question: Does the shutting down and starting up of a pump count as a first attempt of repair for a leaking pump seal?

Answer: I do not see any reason why you cannot count shutting down and restarting a pump as a first attempt at repair (because it sometimes works). However, how long is such a "repair" going to last? You may want to consider if you may get into trouble due to persistent leaks from that component.

45. Question: Owners and operators can comply with the Refinery MACT equipment leak provisions by complying with the provisions of 40 CFR part 63 subpart H. Some of the referenced provisions refer to agitators in heavy liquid service. Are agitators in heavy liquid service to be included in the leak detection and repair program?

Answer: The EPA did not intend the Refinery MACT provisions to apply to agitators. A recent revision (63 FR 44135, August 18, 1998) to the regulation clarified that owners and operators of facilities subject to the Refinery MACT are not required to comply with 40 CFR part 63 subpart H requirements for agitators in heavy liquid service.

46. Question: Clarify the base conditions for equipment in light liquid service; i.e., are the vapor pressure and concentration limits related to the liquid process stream, or only to the HAP in the liquid? If more than one HAP, are they additive?

Answer: The definitions are on the total stream composition, not on a HAP basis only. A question you may ask is, is it clear that you have a choice of using either the greater than 10 percent evaporated at 150°C (§60.593) definition (which is the Subpart GGG cross-reference definition in the rule), or the HON definition (§63.161) in which you go by components, partial pressures, and the percent contributed to the total stream by that component? The fluid must be a liquid at operating conditions. It has to be greater than 20 percent by weight of any pure component in the stream which has a partial pressure exceeding 0.03 kPA. It does not look like you have a choice. You do the 10 percent/150°C test on the stream and the big total. So it might make a difference in some particular circumstances which definition you are allowed to use.

WASTEWATER PROVISIONS

1. Question: A refinery is currently subject to and complying with the wastewater provisions in the Benzene Waste Operations NESHAP (40 CFR 61, Subpart FF). Should the refinery (now subject to the Refinery MACT Rule) be reporting compliance through the BWON or through the Refinery MACT Rule?

Answer: Clearly, in 1998 the Refinery MACT administrative requirements will apply along with Subpart FF. Between now and the compliance date for the Refinery MACT, MACT is not yet effective so you would comply with any overlapping rule. The wastewater provisions of the two regulations are very similar.

2. Question: Sample valves and storage tanks are not included in the equipment leaks provisions; what about water drains on storage tanks?

Answer: As indicated in the definition for "equipment leak" under §63.641 of the Refinery MACT rule (see correcting amendments at 61 FR 29876, June 12, 1996), vents from wastewater collection and conveyance systems (including, but not limited to wastewater drains, sewer vents, and sump drains), tank mixers, and sample valves on storage tanks are not equipment leaks. Section 63.647 contains wastewater provisions applicable to drain systems, and refers to 40 CFR part 61, Subpart FF (the Benzene Waste Operations NESHAP). A water seal is required for drains containing water with a benzene concentration greater than 10 ppm.

3. Question: If a wastewater stream management unit is subject to both the Refinery MACT and 40 CFR part 63 subpart G (the HON), with which requirements must the owner/operator comply?

Answer: A wastewater stream management unit that receives wastewater streams subject to the Refinery MACT is to be in compliance with 40 CFR part 61 subpart FF, the Benzene Waste Operations NESHAP (BWON). When a wastewater stream management unit receives streams subject to both the Refinery MACT and the HON, the unit is to be in compliance with the provisions of §63.133 through §63.137, and §63.140, §63.138, and §63.139 of the HON for storage, conveyance, treatment, and control, the requirements of §63.143 and §63.148 of the HON for monitoring, recordkeeping and reporting, and all of the requirements of the BWON except for §61.355 through §61.357, which include recordkeeping and reporting requirements. Alternately, a recent revision to the regulation allows (63 FR 44135, August 18, 1998) wastewater stream management units subject to both the Refinery MACT and the HON to comply with only the requirements of the HON.

4. Question: Is a refinery's wastewater system required to be included in the startup, shutdown and malfunction plan (SSMP)?

Answer: As requirements for wastewater stream management units, the Refinery MACT references the BWON, which does not include a requirement for a SSMP. However, the Refinery MACT also references the requirement in the General Provisions to develop a SSMP, so whether a SSMP is required for wastewater may not be clear. The EPA did not intend to add additional requirements for wastewater

beyond the BWON. A recent revision to the Refinery MACT (63 FR 44135, August 18, 1998) clarified that a SSMP is not required for wastewater. However, owners and operators may wish to prepare a SSMP because it may reduce reporting when malfunctions occur.

A SSMP is required for wastewater if the owner or operator elects to comply only with the wastewater requirements of 40 CFR part 63 subpart G.

EMISSIONS AVERAGING

1. Question: If a refinery decided to use emissions averaging but then later found they had trouble; i.e., they could not demonstrate they are meeting their quarterly caps or their annual cap or they were having trouble with the monthly monitoring excursions, could they withdraw from emissions averaging without penalties?

Answer: There is nothing in either the HON or the Refinery MACT Rule that spells out what you could do to withdraw from emissions averaging. However, it is clear in the Rule that if you decide to make a change in the way you are complying with the Rule, you can go through a Title V permit modification.

Now, would there be no penalties? Obviously, getting a permit change could be construed as a penalty in and of itself because it will cost you something to get a permit changed. Anybody who wants to use averaging will want to take a fairly hard look at how safe they are at meeting these targets. You would not take the emissions averaging approach without a lot of forethought and planning. The problem with the emissions averaging approach is that you are locked into an operating scenario; therefore, you need to make certain that you can live with that scenario. You should have a margin of safety in your averaging so as not to have a violation.

2. Question: Please give examples of what it means for a credit to be discounted by 10 percent in emissions averaging.

Answer: Basically, what that says is if you control 9 tons worth of a HAP from a tank, for example, you would only get to credit 8.1 of those 9 tons. Another way of looking at it is if the debit is 10 tons per year, you would have to create 11 tons per year of credit. It is just like an interest rate; you have to pay back a little more than what you owed in theory.

3. Question: Can you use emissions averaging for NSPS Subpart QQQ without approval from the Administrator? This question concerns an existing drain system.

Answer: No. The way the emissions averaging provisions are drafted, you have to get approval for the plan approach for compliance and it is to be granted by the State or the permitting authority. Absent a State or permitting authority approval, the EPA Administrator, meaning the Regional offices, would do the approval. But you cannot avoid the approval process.

Regarding the question about Subpart QQQ, I am assuming that this drain system is subject to Subpart QQQ because it is new construction, but it is in the scope of the Refinery MACT standard and it is not subject to the Benzene Waste Rule. Obviously, it has to be in the scope of the Refinery MACT standard to be able to use emissions averaging and, in that instance, you could use this as a debit generator and there would be no prohibition. I would have to check the rule language to make sure that option has not been closed off by something. But basically you could, provided you could find something else in the Rule to be a control credit. Now, what you would have to do is take a complete hit on that wastewater stream. In

other words, you would not get partial credit for having suppressed part of the drain system and no credit for the downstream portions.

The structuring of the averaging provisions has to do with all the issues and debate over what are appropriate models for emissions from wastewater conveyances. And so, to keep it workable we in essence said it is either suppressed and creditable or it is not suppressed and you must look at the thing as the point where you start discharging its contents and consider that against you. So you would have to lay out some more specifics before I could completely answer the question, but you might under certain narrow circumstances have some possibility there.

4. Question: Why are wastewater streams treated in a biological treatment unit not allowed to be included in an emissions average? Does the EPA somehow view biological treatment as inferior to reference control?

Answer: To respond to the second question first, biological treatment is not viewed as being an inferior control technology; biological treatment units do an excellent job treating some materials. You can get very good biodegradation on some materials and not so good on other materials that have greater Henry's law constants. There is a popular view that biological units are inherently bad, but the people working on the HON and the BWON would not agree with that in all circumstances. There were people who commented on the proposal in the HON and they felt very strongly that biological units should not be allowed and that there were great uncertainties about biotreatment efficiency, etc.

Regarding emissions averaging, biological treatment units are not allowed in emissions averaging because of the way the HON Wastewater Compliance Provisions are set up. The HON provisions are different from the Benzene Wastewater Provisions in that we are looking at a lot of different compounds in the HON, whereas the Benzene Waste Rule only applies to benzene. In Benzene Waste, if you meet the suppression requirements for the biological unit and meet the definition of enhanced biodegradation, you are in compliance.

In the HON, because we are looking at a lot of different compounds and combinations of compounds, people figure out what they are required to remove in their Group 1 wastewater streams at the point of generation and calculate a required mass removal. They demonstrate compliance by determining the mass that is entering the bio unit at the headworks and determining the fraction biodegraded for everything that entered this wastewater treatment unit. The actual mass removal is calculated by multiplying the fraction biodegraded by the total mass entering the unit. You then compare the actual to the required amount. If the actual meets or exceeds the required removal on the total HAP, then you are in compliance. If it is less, you have to do something else, such as use some form of upstream treatment unit or consider a totally different compliance approach.

Because you are using the mass entering the bio unit at the headworks, it is a collection of everything (including the Group 1 streams, the Group 2 streams, and the collection of wastewater streams from units that are not subject to this Rule). And it is like one big average pool number. So they would be getting additional credit.

The emissions averaging provisions spell out all the terms of the agreement. In essence, all the equations are in there. The biological treatment provisions would have just doubled that section again. It was a policy call to not allow this. If you have ever looked at Appendix C to 40 CFR 63, I think you will understand what I am referring to.

5. Question: Why are there regulations for new source MACT and emissions averaging when nobody plans to use it?

Answer: The statute requires different standards for new sources and for existing sources. So by statute the EPA had to have new source requirements. And even though the EPA does not think any existing sources will trigger the new source requirements, it is possible that somebody in the future could.

Emissions averaging is there to deal with the extraordinary case where somebody really has a very costly situation and this, despite all of its drawbacks, represents a way to lower their costs of compliance. It does not mean the costs would be low, it just means it is going to reduce their costs for compliance. We have had three companies submit an application under the HON, one of which was very creative. I was surprised that anybody did, given all the statements about the restrictions making it unworkable.

So these provisions are there to deal with abnormal cases. They are not appropriate for the typical situation. This is an issue that the EPA has committed to reexamine. Quite frankly, we have limited staff and resources available to work on it. The Agency will not be able to reexamine the policy until there is a demand for the product.

6. Question: Would you comment on the other stakeholders, the environmental movement, in the development of the emissions averaging provisions? At one time, emissions averaging actually seemed to be a little bit more reasonable than it was in the final analysis. Other people, the environmental community, were afraid that we were going to cheat and get out of making the emissions reduction. I think they stabbed the emissions averaging provision in the back, which is why we do not have one today. Do you think that is a reasonable interpretation?

Answer: I would say that the current emissions averaging provisions reflect the various political pressures that were brought to bear during the time the provisions were developed.

7. Question: What is the size of the penalty charged to a refinery if emission debits exceed credits?

Answer: It's not specific, but I'm assuming that this is a situation where debits have exceeded credits either for the whole year or most of the year. If the program has been delegated to your State, you must first look to the State laws to see what your potential penalties are.

If this is still a Federal program under the Clean Air Act, the civil penalties can be up to \$25,000 per day. You do not want to have your debits exceed your credits because the daily penalty can be multiplied times 365 days. I doubt that you would ever be assessed with a penalty that high, because under the Clean Air Act there are considerations that would be brought into play in determining what the size of a penalty would be, such as your history of compliance, your good faith efforts to comply, etc. However, if the enforcer

can make a case that you have received some substantial economic benefit from your non-compliance, such an argument will work against you when they figure out what your penalty might be. I would caution you that if there comes a time in the course of the year, say three-quarters of the way through the year, where your analysis indicates that you are not going to be able to make up those debits by the end of year, someone might draw the conclusion that you are in knowing violation for the remaining part of the year, so you definitely want to watch out for that. You should also be concerned about the potential for citizen suits, which is provided for under the Clean Air Act.

8. Question: Is the 33 percent emissions averaging debit limit calculated on a monthly average, quarterly average, or annual average?

Answer: The 33 percent limit is calculated on a quarterly basis where the credits can be no more than 130 percent less than the debits.

Potentially, there is a fine if you exceed that cap, but the 30 percent buffer should be enough to deal with seasonal variations and operations between your debit and your credit generators. Another person asked if there is any other penalty. If you fail to properly operate the required equipment, that could be considered a separate violation.

9. Question: Is incineration limited in credit potential to a 98 percent control maximum? Or can 99.99 percent control be used as the credit in emissions averaging?

Answer: There are procedures in the emissions averaging provisions (§63.652) where if you can show that you have a different design or different operating characteristics, you may have a good argument as to why this is a different device than an ordinary vapor incinerator. In those cases, you can get the extra credit. But you do have to submit this information to the permit authority.

10. Question: The Marine MACT rule requires 97 percent control. Flares are credited with 98 percent control if they meet the equipment specifications in §63.11(b). Is the 1 percent difference available as a credit for emissions averaging?

Answer: I do not think that is presently the case. The evaluation of flare performance is based on work that was done in the early 1980*s; it is a regression analysis on limited test data and it will be very difficult to figure out whether you were getting different performance with the flare in the two situations.

11. Question: Is there any EPA guidance on how to determine relative hazardous ranking, or do we have to use the section 112(g) hazard ranking?

Answer: As stated in section 10.3 of the BID (EPA-453/R-95-015b) in response to a comment, the EPA has published an annotated bibliography giving procedures for determining hazardous risk. That is the only guidance we have right now. It was not our intention when we did the HON, and we did not change this when we were developing the Refinery MACT rule, to send you to the section 112(g) hazardous ranking. It was decided to leave the hazardous and risk assessment procedures to the discretion to the State and

local permitting authority. Many States have an Air Toxics rule where they go through and perform the evaluations. You would be using those same procedures. The EPA did not tell you how to do the hazardous risk comparison.

12. Question: How many points can be used at a marine vessel loading facility for purposes of emissions averaging?

Answer: I do not think that the rule spells it out, but in essence you would call each loading dock one point. Every separate marine vessel would not be considered a point.

13. Question: Who has to certify annually that the credits exceeded the debits? Is this the "responsible official" per Title V?

Answer: Yes. This is part of your annual certification. It would be signed by your Title V responsible official.

14. Question: Who approves Emissions Averaging plans until States have been delegated authority through section 112 (l)?

Answer: The EPA Regional offices usually approve such plans unless you know the State has been delegated the authority.

15. Question: Is there any emissions averaging software on the horizon?

Answer: I believe (and this may be out-of-date information that the EPA put up on the TTN bulletin board) there is a program for doing the calculations for emissions averaging. The software is located on the TTN under CAAA (Clean Air Act Amendments; Policy/Guidance; under filename HONAVGAS.ZIP. The intention in putting the program on the TTN was to get some beta testing done. We originally had several people interested in calculation procedures. An EPA employee named Tom Walton prepared the program and it has been on the TTN for quite some time. I think this program is probably free, for anyone to use and try to improve. Part of the rationale for developing the program was that it might also be useful for section 112(g) calculations.

INTERACTION WITH OTHER RULES

1. Question: If you use a process heater or a boiler to control a vent stream, do NSPS Subpart J requirements for monitoring either the H₂S or SO₂ concentration of the fuel gas still apply?

Answer: Yes. The NSPS Subpart J rule is independently applicable, and note that it deals with criteria pollutants and not HAP.

2. Question: In order to comply with MACT requirements, assume that the new control is a combustion unit. Would the unit be subject to PSD New Source Review or NSPS modification? We understand it is a different program, but the EPA must exempt by regulation such other regulatory burden since it has overall benefits to the environment based on MACT's impact analysis.

Answer: I am going to split this up into a couple of parts. It is my understanding that the PSD New Source Review program has proposed a clarification that when you add a combustor or make some other change, it counts as an "increase in the emissions." But if the new combustor or change is due to a regulation, they are exempted from the PSD New Source Review. I hope that it will be published as a final rule soon in the Federal Register.

Concerning the part of the question dealing with NSPS modification, that would depend on whether or not you have expended the necessary capital in order to use this combustor. If you rebuilt the combustor, just the fact that there is an increase in emissions in and of itself does not necessarily mean it is a modification. You would have to meet the criteria (i.e., capital expenditures) in the General Provisions. There are some exclusions from the definition of modification in §60.14(e) which are very helpful in this kind of case. Changing fuels would be an example of an exclusion.

3. Question: Why does the Refinery MACT rule not specify that a Gasoline Distribution system subject to 40 CFR part 63, Subpart CC must only comply with Subpart R in part 63?

Answer: Although gasoline distribution systems are not specifically addressed in the part of the Refinery MACT that deals with rule overlap (§ 63.640(n)), the gasoline loading rack provision (§63.650) clearly states that gasoline loading racks must comply with 40 CFR part 63, subpart R.

4. Question: How do the marine loading provisions of Refinery MACT relate to the provisions of Marine Loading MACT?

Answer: Just because there is marine loading occurring at a refinery does not subject that marine loading facility to controls or to the Marine Loading MACT Rule. The presence of marine loading at a major source of HAP, such as a refinery, does not subject that marine loading facility to controls. You must examine the applicability requirements specifically for the marine loading facility itself; that is, the marine loading facility must of and by itself emit more than 10 tons per year of any one HAP or 25 tons per year of a combination of HAP, and there are some additional applicability requirements, such as a vapor pressure cutoff. You may have some recordkeeping requirements that demonstrate that you are not subject to the rule, but the operation would not be subject to the control requirements.

5. Question: In one of the presentations the statement was made: "In general, the source must comply with only the most stringent rule." Stringent in what regard? Control, Recordkeeping/Reporting, Inspections? What happens if State regulations are more stringent?

Answer: The stringency comparison applies just to the Federal rules. The EPA also made some changes under Gasoline Distribution MACT that basically said you do not have to comply with the Gasoline Distribution MACT rule if you are in compliance with the Refinery MACT rule. The intent was that you will only be required to comply with one of these rules. Another clarification is that there is a list of 189 hazardous air pollutants in the Act, while we have a list in Table 1 of 28 specific air pollutants for the Refinery MACT. To determine the applicability of your source, you are required to count all HAP from the list of 189 in determining whether you exceed the threshold of the 10/25 tons per year of HAP. When you look at your whole source to determine applicability, you will need to look at both inorganic and organic HAP in total to see if your source is indeed major. The 28 HAP that are listed specifically in Table 1 help to clarify the applicability of individual process units. If they do not emit, come into contact with, or contain one of those 28, then it may not indeed be a petroleum refining process unit. So there are two lists and both of them operate somewhat separately from each other.

6. Question: If you have a situation where a State rule is viewed as being more stringent than the corresponding Federal rule, what has to be done in order to justify that stringency? Can the State rule be more stringent than the Federal maximum?

Answer: First of all, this State/Federal interaction and program substitution is bound up in the section 112(l) process, which is under litigation. But a State should be able to go through a process for substituting their own rule for a Federal rule, and that would be the requirement that goes into your permit. I do not know what the timeframe is for settling the section 112(l) litigation, but we hope it will all be resolved before the compliance date for this rule becomes due. Whether or not a State rule can be more stringent than a Federal standard will depend upon the individual State's code. Some States have laws that restrict their ability to be more stringent than Federal rules. You need to look at your individual State rule to figure that out.

Regarding equipment leaks, this can get rather complicated. As a general rule, the different leak definitions do not amount to much difference in the actual weighted average percent emissions reduction. It is a lot of argument for very little difference in performance. If the State has a program on the books and they want to get it substituted and it has reasonable monitoring in it, I do not believe it matters which program you use so long as you pay some attention to maintenance and repair. The State will have to go through the section 112 (l) process after the litigation is settled.

7. Question: Is there a reference indicating which rule is most stringent when comparing the following rules: Refinery MACT, SOCOMI HON, NSPS for Fugitive Emissions, NSPS for vents, NSPS for tanks, and NSPS for marine loading? Or does the State have to do it independently?

Answer: Let me give an example related to fugitive emissions. Suppose you have a new reformer unit located in the refinery and you have 1,000 valves that are in NSPS service. Of those 1,000 valves, you

have a subset having greater than 5 percent HAP. Subpart CC will apply to those. Now you might be maintaining less than 2 percent leakers on your 1,000 valves that apply to NSPS; however, that subset of valves, say 500, that have more than 5 percent HAP may have a leak rate greater than 2 percent. So in that case, it really depends upon your data. Also, not only do you have to look at those two rules but, depending upon how much benzene you have, the Benzene NESHAP for Fugitive Equipment Leaks also may apply and you also have to look at that portion of the subset of equipment leaks and their leak rate. So, again, which is more stringent depends upon your specific data. Tanks generally require double seals but you might have different monitoring, inspection, or reporting requirements. It is not clear in all cases which is going to be more stringent, but where the EPA has clarified that one set of rules applies, that's the set of rules you have to comply with. If two rules apply where a State may not have yet adopted a Refinery MACT, you have to comply with both rules.

8. Question: Were the new fugitive emission correlations used to determine the national emissions and the reductions associated with the Refinery MACT rule? If not, were the impacts/benefits re-estimated?

Answer: The answer is no. We used the older correlations. This has been a continuous unresolved issue throughout the standard development effort. We have answered this question a number of times for the Congress, and we can provide that material.

9. Question: Is the Refinery MACT rule a free-standing Federal requirement like NSPS or is it adopted by States like Title V?

Answer: The MACT rules are free-standing, independent standards. If there were no Title V, MACT rules would still be developed and in effect under Title III of the Act.

10. Question: If the Refinery MACT rule is just a Federal requirement, how does it become a State requirement so that it can be put into a State operating permit?

Answer: This is accomplished through the section 112 (l) delegation process. If a State applies for delegation, that's how the Federal requirement would become part of the State program. Otherwise, it is a Federal requirement that would be implemented and enforced by the Federal government (EPA). The section 112 (l) process was how people were envisioning that if the State had a similar requirement which they thought was equivalent to or better than the Federal requirement, this could all be collapsed in the permit application.

11. Question: When will the EPA Regional offices receive delegation of authority for Title III?

Answer: According to information from the Office of Enforcement, the EPA Regional offices have received delegation of authority. The Delegation Manual change was signed in August of 1995. The EPA Regions have the authority to implement Title III standards that have been issued so far.

GENERAL PROVISIONS

1. Question: There were several questions on startup, shutdown, and malfunction plans, and one question on potential to emit. The question on potential to emit requested further explanation on the subject, and is addressed first.

Answer: Potential to emit includes with it a term called "Federal enforceability." In order for a source to have controls so that its potential to emit is less than what it would be without those controls or those constraints, those controls or constraints have to be federally enforceable (e.g., enforceable by the U.S. EPA). Federally enforceable controls can be a control technology that a source puts on its unit, or it may be a limit on its hours of operation or a limit in production. Such limitations can be a variety of constraints, but they have to be federally enforceable. In the lawsuit that received a final judgment early in the summer of 1995 concerning industry's challenge to the Title III General Provisions definition of "major source," the court ruled in favor of industry but left the rule in place while EPA reconsiders it. This means that until the rule is revoked or amended, controls must be federally enforceable to reduce PTE for the air toxics program.

EPA's general provisions for MACT rules (40 CFR part 63, subpart A) require that only federally-enforceable controls be included in calculations for determining major source status. In litigation, the court ruled that EPA did not adequately support the decision not to credit State or local controls that are not federally enforceable from PTE. EPA is in the process of deciding whether to change the rule, but it remains in effect. However, on January 25, 1995, the EPA issued a transition policy memo stating that for the period through January 1997 effective State-permitted controls are considered as effective limitations on your PTE. (Note: On August 27, 1996, the EPA extended the transition period to July 31, 1998. On July 10, 1998 the EPA further extended the transition period to December 31, 1999.)

Startup, Shutdown, and Malfunction Plans (SSMP)

2. Question: To whom is the notification concerning startups, shutdowns, and malfunctions required in §63.6(e)(3) (General Provisions) to be sent, the local, State, or EPA Regional administrator?

Answer: In general, all notifications and reports, including notifications required under §63.6(e)(3), should be sent to the entity with implementation authority. Before the NESHAP is delegated to the State or local agency to implement, notifications should be sent to the EPA Region. After the NESHAP is delegated to the S/L agency, notifications are to be sent to both S/L agency and EPA Regions, unless the EPA Region waives the dual reporting requirement. If the U.S. EPA has this authority, it should be sent to the appropriate Regional office. If the State has primacy, it should be sent to the State agency. Likewise, if the local agency has primacy, notifications should be sent to them.

3. Question: Are startup, shutdown, and malfunction reports required for every variation from the standard for every emission point, such as heater tank, pump, compressor, or flare control device? Are SSMP's required for each of the above process units or the whole refinery?

Answer: The SSMP is required for the affected source. In the case of Refinery MACT, the affected source is the entire facility. There is nothing, however, in the provisions of §63.6(e)(3) that precludes a source from breaking down the SSMP into something that is more manageable by process unit or by another way that a source would choose to do it. In the correcting amendments to the final rule (61 FR 29876, June 12, 1996), the EPA clarified that, for the purposes of the SSMP, startup and shutdown refer to refinery process units or unit operations rather than to individual components such as pumps. Now, is a report required for every variation from the plan? The requirements in the rule say that the plan must describe in detail what the source is going to do and then, when you are not consistent with the plan, the report has to be made. The question of consistency is an individual determination that each source would have to make. Did we follow the intent of what was written in our plan? How specifically or how broadly was it written?

4. Question: Is the SSMP required only for Group 1 sources subject to Refinery MACT?

Answer: The SSMP is not required for Group 2 sources.

5. Question: Is an SSMP required for air pollution control equipment only?

Answer: No. Part of the purpose stated in the rule is to ensure that at all times owners or operators operate and maintain affected sources, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions during startups, shutdowns, and malfunctions. It covers everything--the operation of the unit and its associated air pollution control equipment.

6. Question: Does the SSMP require EPA approval?

Answer: No, it does not. It is required to be developed much like a Spill Prevention Control and Countermeasure (SPCC) plan, but it does not have to have their stamp of approval unless they choose to review it. If they do choose to review it and find what they consider to be deficiencies, then the owner/operator has an obligation to modify the plan to comply with the Agency's determination.

7. Question: Is an SSMP that simply references refinery process unit operating procedures acceptable?

Answer: Yes. There are allowances in the General Provisions for you to use your standard operating procedures to provide for your SSMP in the event that, in your estimation, they contain sufficient detail and satisfy the intent of the startup, shutdown, and malfunction plan requirement.

8. Question: If refinery unit standard operating procedures are used as the SSMP, will any deviation from the outlined procedures, no matter how minor, be considered a deviation from the SSMP, thus requiring notification? Would it be better to develop simple, more generic SSMP's to avoid this type of problem?

Answer: The General Provisions [§63.6(e)(3)] use the term "consistent." It does not say very consistent, or somewhat consistent, it just says consistent. You have to make that determination. With regard to generic SSMP's, if one is clever in writing an SSMP so that it provides sufficient detail (because there is a requirement that it be in detail), yet is generic enough to where you can maneuver in it, then that would be to your advantage.

9. Question: Do the SSMP's have to be complete at the time of Title V permit application submittal or at the time of Title V permit issuance?

Answer: Neither. It has to be complete at the time of compliance with the relevant standard. Title V is really not an issue here unless the two happen to coincide in their timing. These are self-implementing. All the MACT standards are self-implementing outside of Title V. Title V really has no relevance insofar as when the plan is required.

10. Question: Are changes required to the SSMP considered a modification to the Title V permit?

Answer: The EPA has said that referencing by permit does not mean that the plan itself is included in the permit, but only the requirement to have the plan is included. Thus, changes are not considered modifications to a Title V permit.

11. Question: Is the affected source the entire refinery, or is it just a single tank when considering reconstruction or construction?

Answer: The affected source is defined in section 63.640. The affected source is the collection of petroleum refinery process units and related emission points.

12. Question: Assume an organic HAP process vent is routinely routed to a flare to meet control standards. If the flare experiences a mechanical problem that results in a smoking flare, is this necessarily a violation? Can the SSMP address such a problem so that a violation does not result? How about when a flare mechanical problem results in a flame outage?

Answer: First of all, does the event that occurred fall under the definition of malfunction? Under the definition, it has to be infrequent, sudden, and not reasonably preventable. If it does qualify as a malfunction and if it is covered by the plan, then it should not result in a violation.

13. Question: You mentioned that operation and maintenance (O&M) requirements are enforceable independent of emissions limitations. In the General Provisions, there is a rather broad statement. It does not refer to any specific standard, but is general to all standards.

Answer: The O&M requirements of the General Provisions apply to all sources. In addition, in the event that you have an O&M requirement (LDAR requirements in Subpart H could be considered as maintenance anyway), and there is a violation or a non-compliance with that O&M requirement

(notwithstanding the fact that you do not have an emissions limitation violation), you can be held liable for the O&M violation. Those are enforceable independent of emissions limitations.

One other point about that--you are required to install, calibrate, maintain, and operate all monitoring equipment in compliance with the manufacturer's recommendations, which is another example of the type of requirement that becomes enforceable essentially the same way.

A revision to the rule that is currently being considered allows monitoring equipment to be installed, calibrated, maintained, and operated in compliance with manufacturer's recommendations or other written procedures that provide adequate assurance that equipment will monitor accurately.

14. Question: Do the construction permit approval requirements of §63.5 apply to the installation of a new process unit in an existing refinery? Assume that the new process unit would have a potential to emit greater than 10 tons per year of one HAP.

Answer: Yes, they do. You would have to comply with those requirements (it is not considered reconstruction).

MONITORING AND INSPECTIONS

1. Question: Is the reconstructed source under §63.640(k)(2) the whole refinery or just the process unit?

Answer: Basically, this is a question about applicability and the designation of affected source. "Source" has a statutory definition. It is the entire contiguous facility under common control, so source in this particular case means the whole source, the whole refinery. And, of course, the sheer size of the typical refinery makes it difficult to trigger reconstruction (50 percent of the cost of the facility).

2. Question: What kind of monitoring equipment is expected to be used to continuously monitor effluents before co-mingling? What parameters must be measured?

Answer: Although "effluents" is the word used in the General Provisions, you could say "vent streams." There is no requirement to monitor any streams under the Refinery MACT rule. There are, however, some requirements to monitor the control device (described in §63.644). You would be monitoring the inlet and outlet of the control device, so you could say that such a stream is co-mingled, but there is no actual requirement to monitor the stream in the Refinery MACT, just the efficiency of the control device.

Referring to the General Provisions language, it says that if you have co-mingled vents from different affected sources, they must be monitored independently. Since there is only one affected source in Refinery MACT, clearly you can co-mingle different vents from different emission points.

3. Question: Does the boiler performance test require the establishment of a residence time?

Answer: No, all you need to do is sample, analyze, and determine either the percent control or that the outlet organic HAP content is less than 20 parts per million. At the same time, you would establish a range--either a maximum or a minimum--for some parameter of the control device, and that's typically temperature either in the firebox or the combustion zone, or into and out of the catalyst bed. There is a further note that this is a requirement for CVS (closed vent systems). Under certain rules, there is a requirement for the control device, but not the CVS, to be monitored for residence time or verification that the design has adequate residence time. And in general, that doesn't apply here. If you go the Subpart VV option and you enclose (instead of monitor) the valve and vent it to a closed vent system to a control device, then it would have a residence time requirement under the General Provisions for the control device. However, that is an option. You do not have to elect that. You can do the demonstration, and it can be a design evaluation under Subpart VV and the tank rules.

4. Question: Someone asked me to explain my comment about introducing the vent stream outside of the flame zone and then triggering a performance test requirement.

Answer: If you want to control a vent stream by introducing it into a boiler or process furnace and that boiler or process furnace has a heat input greater than 44 megawatts, you have no requirement to do any monitoring. You also have no requirement to do any monitoring if you introduce it into the flame zone of any boiler or process heater. "Flame zone" is defined as the envelope created by the flame. You cannot

introduce it outside of the flame (at the top of the radiance section or in the convective section, etc.) in order to meet this requirement.

5. Question: What is the monitoring requirement for a thermal oxidizer (a forced draft flare with pilot and supplemental fuel) if a backup flare's monitoring requirement is the only evidence of a pilot?

Answer: There are three things to point out here. First of all, if you are talking about an air-assist flare, that has different requirements than an enclosed oxidizer.

Second, the straightforward answer is that you still have to monitor the temperature in the firebox. And the third thing is that it is not just evidence of the pilot that you have to monitor in the flare. You also have to be aware of the other requirements in the General Provisions, §63.11(b), such as the minimum net heating value of the gas stream and the maximum exit velocity. Under §63.11(b), it's a one-time test. The requirement depends on whether you have an enclosed device or an air-assist flare. You should check §63.644(a)(1) and §63.11(b) to determine the differences.

6. Question: Under Refinery MACT, a process vent can be directed to a flare for control. If a flare is already subject to NSPS Subpart J and must be monitored for H₂S, does this mean the process vent is subject to H₂S monitoring as well? Or is it strictly limited to the monitoring required under Refinery MACT no matter what the flare is subject to?

Answer: The process vent is not subject to H₂S monitoring. There is no requirement in Refinery MACT to monitor any kind of compositional qualities of the stream itself; merely that the control device meets performance parameters. So the answer to the second part would be, yes, it is strictly limited to the monitoring required under Refinery MACT. The larger question is whether the addition of the stream to the gas going to the flare modifies the composition of the flare gas enough to change the NSPS Subpart J requirements. I would assume that they are independently enforceable and, regardless of what you mix to send to the flare, you have to meet the NSPS Subpart J requirements as well.

7. Question: Are hourly flare pilot monitoring records to be instantaneous readings recorded once per hour or can they be hourly averages of the amount of time the flare pilot was actually on?

Answer: Neither the Refinery MACT rule nor the General Provisions has a recording requirement for this variable. The General Provisions say you have to "monitor the flare presence at all times." The Refinery MACT calls for a device capable of continuously detecting the pilot flame. There really is no recording requirement, but there is a requirement to monitor continuously. There is a requirement to make a record if you do not have any of the pilots on, but you do not have to have continuous records to prove that your flare was on. You have to be able to show to enforcement that your system would be capable of detecting an outage, should they question the fact that you do not have any records.

8. Question: Is there a specified frequency in documentation for every liquid component -- sight, sound, and smell inspections?

Answer: No. Neither Subpart VV nor the HON specifies a frequency, only a requirement to do the monitoring. Once you actually perform the Method 21 monitoring, you trigger the documentation requirements for that monitoring.

9. Question: Why would you want to volunteer to monitor connectors for fugitive emissions?

Answer: The straightforward answer is that if you look at Tables 8 and 9 in the Refinery MACT rule, you get larger bands for the percent leakers in the Phase 3 program for the modified HON. This should in theory translate to reduced frequency of monitoring for valves and, therefore, overall reduced stringency of the program. Some States may already require a connector monitoring program. The provision for voluntary connector monitoring was put in there to say that for those of you who are doing it already, maybe this would be beneficial because it does give you a less frequent Federal requirement for monitoring. Some States may have less frequent monitoring under those circumstances.

10. Question: Does maximum achievable control technology (MACT) have any relationship to the equipment used for fugitive emissions monitoring? In other words, does MACT require automated data collection systems utilizing machine-readable tags for component identification and data integrity?

Answer: No. As the Clean Air Act points out, MACT can be a work practice if an emission limit is not feasible. In this particular case, emission limits were not feasible for the individual leaker, so the EPA left it as a work practice. You are required to perform the inspections and keep records, but how you accomplish this is entirely up to you. It is anticipated that most people will be using data logger systems and the like because of the sheer volume of the large number of equipment items involved.

11. Question: Is there a requirement for refinery operators to inspect the tightness of tank trucks loading at a rack that is contiguous with the refinery?

Answer: There is no requirement for refinery operators to inspect the tightness of tank trucks. It is the responsibility of the owner or operator of the source to load only into vapor-tight trucks. And those trucks are required to have documentation of their vapor tightness. You are required to verify within 2 weeks of loading that the truck was vapor-tight. And if you by error loaded a nonvapor-tight truck, the documentation would be useful in ensuring that this tank was not reloaded. The rule says that the owner or operator--and that's defined in the case of a contiguous source as the person with common control--has the responsibility to keep track of the trucks loading at the racks.

12. Question: Does the internal inspection of an internal floating roof tank require an inspection below the internal roof?

Answer: It is implicit in the rule that the answer is yes. This would be the only way to discharge the inspection requirements of §63.120(a) of 40 CFR 63, Subpart G, which requires you to inspect the seal. There is no way that you can inspect the bottom of the seal from the top of the tank unless you completely remove it. This is quite obvious in dual-seal systems where the secondary seal is going to obscure the

primary seal, but even if you had a continuous liquid mounted seal or floating log, you still have to get underneath it to see the bottom of the primary seal.

13. Must a pilot flame be present at all times in each refinery flare pursuant to 63.11(b)(5), or only when gases are vented to the flare?

Answer: The intent of the rule was to require continuous monitoring of flare pilots at all times. Based on the drafting in 63.654 (g)(6), I believe that the rule requires monitoring of flare pilot flames and reporting whenever there is an operating day when all pilot flames are absent. The refinery rule defines continuous records as one reading per hour. EPA has prior determinations for NSPS that are similar.

14. A thermocouple, ultraviolet sensor beam, or an infrared sensor is required to detect the presence of a pilot flame pursuant to 63.644(a)(2)-- are these devices considered to be continuous monitoring systems (CMS) as in 63.8?

Answer: Yes, I believe these systems are considered to be CMS. However, these systems are not subject to the requirements of 63.8 because of the exemption in 63.8(b)(1)(iii). Note: (The only way this would not be correct is if the subpart CC explicitly said that flares had to comply with the requirements in 63.8). The intent of the monitoring requirement was to ensure that if a gas stream were vented to a flare that it would be controlled. Hence, we want to be certain that the flare will light. Thus, there is a monitoring obligation on the flare pilot lights.

PROCESS SAMPLING

1. Question: What exactly is "in-situ sampling," and what kind of equipment is used?

Answer: In-situ sampling is sampling of a gas stream that is continuously going through either a sampling loop or some other very small bore piping directly into some monitor. It is used primarily for quality control purposes. We are taking a small slip stream into a gas chromatograph or some other instrument that gives you a feedback loop to readjust your process if it is out of kilter. The reason in-situ sampling is exempt in the Rule is that the sampling pipes or tubings are very small.

RECORDKEEPING

1. Question: What are examples of existing records that may be allowed by a State Implementation Plan (SIP)? Are they the same as local agency records?

Answer: Yes. For example, in the Galveston area they have Regulation 5, which is a very tough set of SIP rules. It requires essentially the same controls, if not more stringent, than the Refinery MACT Rule. It would seem reasonable for people in this area to use those rules in lieu of the Refinery MACT. The General Provisions allow you to do that and also keep the same records that you are already keeping in lieu of the recordkeeping here. The EPA has written a White Paper 2 (located on the TTN Bulletin Board), which allows facilities to comply with more stringent local rules if using the Title V process.

Of course, this would have to be negotiated with the implementing agency. Remember the SIP is an implementation plan by which the local agency tells the EPA how it plans to meet the requirements of a CTG or similar guidelines. Oftentimes, particularly in Texas, the local agency will say, "We'll do this to comply instead of that, because it's equivalent." The EPA does not have a problem with that as long as you are getting the same level of control.

Please note that the process of getting the SIP revision accepted may be time-consuming. We hope by the time the compliance date is in effect for this Rule, the whole SIP will be revised and accepted so there will be a simple way to consolidate reports. We put that in this Rule, anticipating that the problem would be corrected. But in and of itself, the provision in §63.640(q) does not deal with the problem.

2. Question: How long do performance test records have to be kept? And after the compliance notification, are they needed?

Answer: Performance test records have to be kept for 5 years. Since these records are required in the regulation, they need to be kept after the compliance notification.

3. Question: Do LDAR performance tests have to be submitted with the compliance report? All the records?

Answer: It depends on what is meant by an LDAR performance test. If this refers to annual testing of equipment required under Subpart VV such as something designated as a leakless valve or a no detectable emissions component, I do not believe those are considered to be performance tests that have to be submitted. Such tests are considered routine leak inspections. However, if you find that you are exceeding the no detectable limit (500 ppm) in Subpart VV, that would be considered a violation.

All of the records documenting the various details in the compliance status report do not need to be submitted with the report. Submitting such excess documentation is not required, and may displease your local enforcement agency if they receive it.

4. Question: This question pertains to one of the slides on storage tanks (workshop presentation). It says, "Slide 10, second bullet from the bottom -- filling or filing?"

Answer: In slide 10, I am referring the requirement to report in advance when you refill your tank. To quote from the rule--"shall notify the Administrator at least 7 calendar days prior to refilling of the storage vessel." Notification shall be made by telephone immediately followed by written documentation, demonstrating why the inspection was unplanned. This notification may also be made in writing so that it is received by the Administrator at least 7 calendar days prior to the refilling. So while there is nothing in the rule that requires you to keep a record of when you refill your tank, you do have a requirement to notify EPA to provide 7 calendar days--the other one was 30 calendar days--to give the EPA an opportunity to inspect, if you are doing your yearly inspection. So the only way that you can prove that you did give them the 30 days is to have a record showing when you refilled it, when the tank was emptied, and when it was refilled.

5. Question: Does "readily accessible" mean that all records including performance tests, lab tests, P&I drawings, VOC, etc. need to be in file cabinets all located at the same office or can lab reports be in the lab, maintenance records be at the refineries in the maintenance department, etc.?

Answer: All the rule says is that you have to be able to produce the records within 24 hours. It does not tell you where you have to keep them. You can keep them on-site or off-site. If you can get those records to them in 24 hours, that is considered readily accessible.

6. Question: How many full-time employees are necessary to handle the Refinery MACT for a 100,000 barrel-per-day refinery?

Answer: It would depend on the particular refinery. It is obvious that, for the fugitive emissions monitoring program, the larger refineries are going to need more people than the smaller refineries. But it will depend upon your refinery and whether or not you have an inspection monitoring program right now that is usable for the MACT requirements.

7. Question: If we choose the Subpart VV compliance method, do the Subpart VV records and reporting requirements apply? Do any refinery MACT records and reports apply if Subpart VV records and reports apply?

Answer: No. If you choose Subpart VV, you only do the reporting for Subpart VV. An additional point is that Subpart VV's records section applies only to VOC, not HAP. Subpart VV is a VOC regulation. So, of course, Subpart VV may apply to things that do not have HAP in them, and that could cause some confusion at your refinery.

8. Question: You stated that if the flare's only pilot is out for 24 hours, you have an excursion. If the pilot operated 1 hour out of a 24-hour period, would you be in compliance for that day under refinery MACT?

Answer: Yes. The 24-hour period comes from a specific requirement, and is how a period of excess emissions is defined in the Refinery MACT rule under §63.654(g)(6)(i). It says that all the pilots have to be out for 24 hours straight, an operating day, for it to be a period of excess emissions that has to be reported in an Excess Emissions Report. If you go out, however, for 1 hour or some other period, then you go into your startup, shutdown, and malfunction plan. As long as you do what is consistent with that plan, you are not out of compliance with the Refinery MACT.

You have a requirement to monitor and keep records of whether or not your pilot is on and it comes from §63.654(i)(3), where it says, “each owner or operator required to continuously monitor operating parameters under §63.644 for miscellaneous process vents or under §§63.652 and 63.653 ... shall keep the records specified in (i)(3)(i) through (i)(3)(v) ...”, and it says operators must record either each measured data value or block averages for 1 hour or shorter periods. Paragraph (i)(3)(iii) requires daily average values of each continuously monitored parameter to be calculated and recorded.

9. Question: Can electronic data exchange protocols be established to enable streamlined reporting to State and local agencies as well as to the EPA?

Answer: Yes. I think that was the whole point of why the allowance for electronic media was put into the rule. The key words here are “be established.” I do not think that method is established yet. The States will probably decide because this rule will be delegated to the States, and will not be implemented and enforced directly by the EPA. So whatever you come up with will be through the Title V permit process. You should be able to work that out with your State. You can just submit the reports on a computer disk.

10. Question: Would the EPA Regional offices consider requesting record submittal on demand only, to avoid having to warehouse large volumes of paper?

Answer: The EPA had at one time thought about just not requiring any reporting whatsoever. It turned out that this would have conflicted with the Title V process. Title V of the CAA requires semiannual reports to show you are in compliance.

11. Question: There was one other question about the provisions in the refinery rule that allow States and local agencies to consolidate the reporting and recordkeeping requirements.

Answer: This was done to set the stage for some consolidation of provisions that are being worked on right now. In the Title V permit process, they are working on a policy to allow State agencies to collapse or consolidate several overlapping and similar monitoring and recordkeeping requirements into a single requirement to use as your applicable requirement. We are also working with CMA on a pilot project to consolidate the SOCOMI rules and, as part of that process, we’re looking more broadly at the possibility of setting things up so that States can put their rules into this consolidated rule. Then you could collapse all the provisions into one set of applicable requirements in the permit.

REPORTING AND NOTIFICATIONS

1. Question: Is reporting under the Benzene Waste Operations NESHAP (40 CFR 61 Subpart FF) still required if a unit is subject to the HON?

Answer: A recent revision to the Refinery MACT (63 FR 44135, August 18, 1998) allows owners/operators to comply with only the requirements of the HON if both the HON and 40 CFR part 61, subpart FF apply.

2. Question: Could you provide some examples of pollutants that are being controlled, the control device and, generally, what records and notices are required?

Answer: The question here is to work through an example of a vent stream and how it would be controlled and what you would monitor and what you report and record. I tried to come up with some quick examples due to limited time. One that came to mind immediately was the example of an amine scrubber at your sulfur recovery unit (SRU). Assume there is a three-phase separator at the front end of the rich amine three-phase separator and it is floating on the flare.

The pollutants that may be released could be any of the range of light hydrocarbons that are also HAP. If you are scrubbing a stream that has that material in it, or small trace concentrations that might get knocked down, they could vaporize and float up into the flare. The flare then becomes a control device if the vent off the top of the three-phase separator meets the definition of a Group 1 vent. Then you would have to meet the requirements in §63.11(b) for the flare (i.e., that there are no visible emissions, that the heat content of the gas meets the limits in the Rule, and that the exit velocity from the flare meets certain limits).

Another example would be the emissions from the vacuum ejector on a vacuum tower at the crude unit. Assume you are venting the tailgas (or hotwell gas) into a flare. You would have the same requirements as we were talking about with the three-phase separator. Alternatively, you could vent the tailgas into a fuel gas system, in which case the tailgas disappears from the regulatory scheme because it meets the fuel gas exemption or you could route the tailgas to the firebox of a heater where it is then defined as a Group 1 miscellaneous process vent, but there are no monitoring/recordkeeping/reporting requirements.

Another alternative is to direct the tailgas to a vent gas stack to control by incineration. In this case, you would be subject to monitoring the firebox temperature or the catalyst inlet and outlet temperatures. You would have to record those readings and report any periods of noncompliance.

One of the challenges of the rule is that you need to evaluate your units to figure out what your vent gas streams are, and then take your knowledge of those streams and place those streams into the correct boxes--not a process vent, a Group 1 process vent, a Group 2 process vent. A lot of us tend to think of a process vent as something that you throw away from the process, but we tend to forget that a lot of the distillation tower accumulators will bleed off into the fuel gas system or to a low pressure utility gas system. We tend to forget about knockout drums floating on flare systems, and about vacuum ejectors going to

blowdown stacks. The challenge will be to draw an envelope around our process units and find all these streams and assign them to the right categories.

3. Question: Is immediate notification required for a SOCOMI HON unit shutdown if it does not result in any excess emissions? Example: the unit is shut down due to economics, and no maintenance is performed. If so, please describe the proper reporting requirements.

Answer: This was not the intention. However, the rule could be misconstrued to say otherwise at the present time. The EPA intends to make a technical clarification to the HON so that this kind of issue is addressed. They did not intend for reports to be required for this kind of situation.

4. Question: What agencies would want these reports concerning notification of process unit shutdown? To whom do you send the reports?

Answer: That depends on which agency has enforcement authority. If the EPA Administrator (Regional office) is the right place as stated in the regulation, then you need to send the report there unless some sort of delegation has occurred.

5. Question: If you elect to comply with Subpart VV for the MACT LDAR program, can the semiannual report be incorporated with the current NSPS semiannual report and be submitted according to the same schedule currently used?

Answer: Yes, but you have to look carefully through 40 CFR 63, Subpart A, the General Provisions, for the exact approval provision in that regulation because it does allow for a State to coordinate the scheduling of required reports.

6. Question: Are performance evaluations for continuous monitoring systems reported in the notification of compliance status the same as the RATA's under NSPS rules? (p. 234) If so, is this a redundant Federal reporting requirement?

Answer: Probably not. The NSPS apply to criteria pollutants and the MACT Rules are for hazardous air pollutants. Although sometimes there is an overlap (e.g., benzene is a HAP and also a VOC), I think it would be unlikely that the overlap would be so strong that the test you are performing for HAP would be the exact same test you would run when looking for the NSPS criteria pollutants. It was not long ago that they finally came up with a formal specification for VOC. So there are not a lot of them that I know of. The RATA test should be fairly similar.

Such reporting requirements have not been identified as a problem. There may be some cases when your miscellaneous process vent has two different requirements--a 20 ppm HAP threshold and a VOC limit--if you have already done a performance test and can prove Group 2 status with that, I cannot see why you would have to do another one.

However, I would caution you about doing things like a Group 2 determination based on a lab analysis and just putting the lab analysis into your Lotus spreadsheet and then throwing it away and keeping the Lotus spreadsheet. Someone might come back one day and ask where the X parts per million HAP came from. So you would need that analysis, but all you need is just one complete record. There is no requirement to have dual records, and the idea of going to an electronic format is just to help people save those records.

7. Question: Does the notification of compliance status apply to the source's status as of August 18, 1998 or for the period from the proposal date to August 1998?

Answer: This report is really intended for the performance test results, etc. The first report is for a 6-month period, that short period of time before the compliance date, so you have about 3 months to prepare the report. You do not need to submit your long equipment leak history or any kind of long set of records and you do not have to submit a complete history of your plan.

8. Question: What is the purpose of submitting all these reports when nobody looks at them, and they just collect dust at the agency?

Answer: There is a valid reason for requesting some reporting, and the rules do not require you to report everything.

In most of the rules I have been involved with, we (EPA) have tried to only require reporting of those things that are most important for figuring out whether or not people are on the right track and to receive some form of informational status. Clearly there is room for improvement on what is reported. When we prepared the HON as well as the Refinery Rule, we evaluated what needed to be reported. For example, we do not require you to submit every performance test as was done in the NSPS. There is no reason for submitting redundant Method 18 tests on thousands of different things. The Agency needs to know that the idea is okay, and then receive some summary information.

Some enforcement offices do look at these reports. One reason they like to have certain information is that it gives them an indication as to who might be misinterpreting requirements and potentially having a long-term violation. They also use this information to identify facilities for inspections. And, of course, this information is also sometimes a basis for enforcement action.

9. Question: Is there an estimate of the time needed to fulfill the reporting and recordkeeping requirements, excluding the LDAR portion of the Refinery MACT?

Answer: You should look at the information collection request (ICR); about one-third of the burden is associated with the non-LDAR requirements. In calculating the burden, the EPA assumed that very few vents would go to a control device that required monitoring; i.e., most vents would go to a fuel gas systems or boilers.

10. Question: Are quarterly reports for emissions averaging required if there are no exceptions during the quarter?

Answer: You are still required to submit your periodic reports because you have to report the credits and debits calculations. Consult §63.654(g)(8) for this provision.

11. Question: Is the initial notification required 120 days after promulgation; i.e., after August 18, 1995?

Answer: No. There is no initial notification required.

12. Question: Are LDAR reports to be included with the periodic reports or should they be submitted separately?

Answer: The LDAR reports are to be included. You should take a look at the Federal Register (60 FR 18030), which says you are allowed to incorporate the LDAR reports with the periodic reports.

13. Question: Will the Refinery MACT rule eliminate redundant reporting?

Answer: My opinion is that some redundant reporting has been eliminated. For example, the EPA has given the States the authority to waive certain requirements or to consolidate requirements. There are some provisions in the General Provisions as well that allow some consolidation.

14. Question: Is monitoring of cooling towers covered anywhere under Refinery MACT?

Answer: No, it is not covered under this rule. There is a separate cooling tower MACT rule (40 CFR 63, Subpart Q). In the HON, there is a provision that requires sources to monitor leaks of process fluid into the cooling water, which is under discussion in the HON litigation. Basically, the idea there was to do something to bring about repair of leaks of process fluid into your cooler water. For the refinery situation, you need to be concerned about the BWON (40 CFR 61, Subpart FF). The BWON picks up any of those situations, and you would have to comply with it under the BWON treatment requirements if you do have a leak that exceeds 10 parts per million benzene in the water.

15. Question: Do periodic reports for storage tanks replace NSPS reports (e.g., Subpart Kb, etc.)? Or are these reports submitted in addition to the NSPS reports?

Answer: You have to comply according to which rule takes precedence. However, recent revisions to the MACT rule have (63 FR 44135, August 18, 1998) made storage vessel reporting requirement similar for the various applicable rules. For example, if your tank must comply with Subpart Kb, previously, you would report every gap measurement, not just when you are out of compliance. Previously, this report would be submitted within 60 days of inspecting. The recent revisions to the rule allows reports of inspections required by Subpart Kb to be included with periodic reports and only require reports of rim seal measurements when measured gaps or calculated gap areas exceed limits specified in Subpart Kb.

16. Question: In reference to periodic reporting being optional, can you give an example of when a periodic report is and is not required?

Answer: You need to report any time you have a compliance exception listed in §63.654(g)(1) through (g)(6). However, because LDAR reports are consolidated with periodic reports, you will always have to submit a periodic report. There is no circumstance under which you would not have to submit a periodic report.

17. Question: In §63.640(m)(1), there is a requirement to submit a compliance schedule for changes that move a "Group 2" emission point to a "Group 1" emission point within 180 days after the change is made, or the information regarding the change is known to the source. Why is the phrase, "or the information regarding the change is known to the source" necessary when up to 3 years is given to bring the changed emission point into compliance with the existing source standards? If 3 years is allowed for compliance, why must the 180-day clock begin ticking before the change actually occurs? What would constitute information regarding the change being known to a source?

Answer: My opinion is that the EPA's intent is--the emphasis is on the "as expeditiously as possible"--"compliance as expeditiously as possible," and not the "up to three years." As long as you have received information that your Group 2 emission point will change into a Group 1 emission point, I believe it is the EPA's intent that you submit a compliance schedule as soon as possible. And they have provided 180 days.

And what would constitute information regarding the change being known to a source? It would really be any type of information; e.g., if you are informed by your plant operation personnel that something may be changing. So to me, it is any type of information that would be available.

18. Question: Please explain the waived initial notification reporting requirement for Refinery MACT. How is this different from the HON?

Answer: One of the primary intents of the initial notification is that the regulatory agencies will know which facilities are in fact subject to the rule. Refinery MACT really covers most of the existing refineries; as far as we know, all of them. (There may be a few that are under the 25/10 tpy limit.) So these refineries are all published in the trade journals and people know where the refineries are, so that's the reason for waiving that reporting requirement.

19. Question: Do we use the SOCOMI HON reports and frequencies if that option is chosen or, alternatively, do we submit NSPS reports and their frequencies if the NSPS option is chosen? How do these reports interact with Refinery MACT reports?

Answer: I think that the EPA has taken care of this in the final rule and they have consolidated their requirements; the reference is to the SOCOMI HON section, but this has been modified to be more in line with the NSPS reporting requirements. So it is basically the same frequency as NSPS and the same kind of report. If anybody finds any inconsistency, we would like to know about it because that will be something that we will want to discuss with the EPA as we are streamlining the reporting requirements.

These reports are part of the Refinery MACT reports. For the initial report or the semiannual reports, people have asked about the level of detail that is necessary. I do not think that anybody wants to see all the details of your monitoring and the exact values monitored for each individual component in your facility (although we recognize that some local agencies require that). I think what the EPA has envisioned is a summary focusing on the exceptions or the exceedances.

20. Question: If a new Group 1 emission point is added or created after the August 18, 1998 compliance date, when is the notification of compliance status report for that point to be submitted?

Answer: A recent revision to the Refinery MACT (63 FR 44135, August 18, 1998) allows the notification of compliance status report for a new Group 1 emission point to be included in the periodic report for the reporting period in which the Group 1 emission point was added. Similarly, if a storage vessel is brought into compliance after August 18, 1998, the notification of compliance status report for the vessel is now to be included in the periodic report for the reporting period in which the vessel was brought into compliance. The report is to include a list of Group 1 storage vessels and either the actual or anticipated date of compliance for each vessel.

MISCELLANEOUS

1. Question: Who can sign the certification of the need for shutdown?

Answer: The Rule does not specify any particular signature authority. There is nothing like the Title V type of certification. But the rule does imply that the signature has to be by someone of supervisory capacity, not just the operator's. The signature does not have to be from a plant manager or company VP, but someone other than just the person that is doing the monitoring. Somebody has to confirm that there was a need to do a shutdown so that, in case it ever gets questioned an inspection situation, there will be somebody that can document that they went through the analysis.

A recent revision to the rule (63 FR 44135, August 18, 1998) allows the name of the person making the decision to delay the equipment leak repairs to be recorded instead of requiring a signature.

2. Question: For MTBE at a refinery, how much MTBE is needed to qualify it as the primary product?

Answer: Let's hypothetically say you have four output streams on the unit and none of them are recyclable, they are legitimately four different product streams. Assume one output is 30 percent and then divide up the remaining 70 percent. In this case, the predominant stream (30 percent) is the primary product. It is important to note that the primary stream does not necessarily have to be greater than 50 percent (e.g., a unit with four output streams).

3. Question: How do you incorporate the MACT/HON standard into your facility's Title V permit, especially for MACT standards with future requirements with known effective dates? Would it be proper to detail a compliance schedule (with milestones) to achieve or would it be correct to make a general statement that compliance will be achieved by the effective date without any commitment to interim monitoring, recordkeeping, and reporting for the interim period (until the effective date)?

Answer: I would specify interim dates and, of course, you can always provide additional detail on your compliance schedule.

The question about milestones raises the issue of whether these are enforceable dates of construction, possible construction, or other issues that you are committing yourself to. You do not want to provide those dates unless you think that you can meet those dates. If you are using the waiver provisions, there are milestone requirements in the General Provisions that you would have to provide at that time.

You need to consider the timeline for compliance either when submitting your Title V permit or at least have a timeline on file. Some of the things you need to include in the timeline are when things will be built, notification requirements if you are making compliance demonstrations, or some constructions associated with the issues that you have to make those notifications. These dates are important to have set accurately and you will be submitting those if your engineering firm can provide you an exact date when your construction is going to be begin. However, I do not see that being a specific requirement at this time.

So you need a gross statement of whether compliance will be achieved by the effective date. Now, if you have some interim dates that you know are going to be in there, particularly for the fugitive emissions program, and you realize that you have some prior notifications, you want to make sure that the agency is aware that you are knowledgeable about those. You may not want to give a specific date but you should make the notification in accordance with the General Provisions prior to a compliance test.

4. Question: Please define a closed vent system.

Answer: A closed vent system is a system used to convey gases or vapors from a piece of regulated equipment, such as a pressure relief valve, to a control device. The system is made out of heating and ventilation type duct work, or it may be ANSI piping. Some of the old rules had a requirement that you had to obtain an annual certification that you were getting all the required material to the control device. The certification was the result of enforcement personnel finding a facility where a stream was subject to control and the conveyance system had a hole in it. I have been at facilities where there was a pneumatic conveyor for particulate that was in essence shooting arsenic all over a hillside because there was a hole in the tube. But that type of conveyance system is not really likely or prevalent in the refinery or chemical industry.

As a result of some data that we have received over the years, some problems have arisen with the Equipment Leak Rule resulting in somebody insisting that the entire refinery was a control device. Over the years we have tried to make this more workable which is the reason we put a provision in Subpart VV and in the Refinery MACT Rule making it clear that if you are sending a stream to a fuel gas system, the fuel gas system is not a control device and does not make the whole refinery subject to the 500 ppm no detectable emission provision.

5. Question: What constitutes a control device; e.g., can a drum be considered a control device?

Answer: It depends upon what is meant by "drum." Typically, in most of the rules and in Subparts VV and H, a control device is defined as a vapor recovery device, a condenser, or an incinerator-type system. However, if by drum you mean a can containing carbon, that would be a control device. But if you mean a drum such as a knockout pot, most people would not call that a control device. It has to be some type of active system.

6. Question: Is there a good API or other guidance document concerning what should be in a startup, shutdown, and malfunction plan?

Answer: No. The startup, shutdown, and malfunction requirements in the General Provisions are fairly short. The idea is not to dictate every section and every point that you would want to make in your plan, but to leave it to the owner or operator to determine what is appropriate to include within general guidelines. There is language in the preamble or possibly the Rule itself which says standard operating procedures (SOP's), if they are appropriate to the SSMP, may be incorporated. The plan itself may be the standard operating procedures if in fact the SOP's contain everything that the owner or operator thinks should go into the SSMP.

7. Question: When controlling miscellaneous process vents by use of a process heater that is greater than 150 million BTU's per hour, would a permit revision be needed to reclassify the process heater as an incinerator?

Answer: The Refinery MACT Rule does not require reclassification of a heater by putting a vent stream into a heater. However, it may depend on where you are located or what your permitting agency requires. That would be a question for that permitting agency.

8. Question: Does the SSMP apply to control devices; e.g., flares, thermal oxidizers, etc., or to specific process units? Please illustrate.

Answer: There is one sentence in the General Provisions, §63.6(e)(3)(i), that essentially says it all: "The owner or operator of an affected source shall develop and implement a written startup, shutdown, and malfunction plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown, and malfunction and a program of corrective action for malfunctioning process and air pollution control equipment used to comply with the relevant standard." Of course, the affected source is the entire refinery.

At our company, it is our plan to divide up our refinery into some type of business units or operating units that make sense and have separate SSMP's for those specific areas of the refinery (the regulation does not preclude us from doing this). To write one plan for a fully integrated large refinery would be voluminous and would have parts of it that are not applicable to specific units in the refinery. How you write your SSMP is up to you and what pieces of equipment you include in that plan is left up to the owner or operator, depending upon which pieces are affected by the Rule.

9. Question: Would major reconstruction taken during turnarounds trigger the need for a permit modification?

Answer: Part of the definition of "reconstruction" in the General Provisions reads: "Reconstruction means the replacement of components of an affected or a previously unaffected stationary source to such an extent that the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new source."

This definition is similar to the NSPS definition for reconstruction. The key here is that the affected source is the entire refinery. So you must evaluate each case individually and determine if you exceed that 50 percent threshold.

10. Question: Do the following situations qualify as "malfunctions" for the purpose of implementing the startup, shutdown, and malfunction plan?

- (1) A tank seal with seal gaps in excess of allowable amounts? No.
- (2) A leaking component in your fugitive emission monitoring program? No.

(3) Downtime on a continuous emission monitoring system required by the MACT? This depends on the reason for your downtime; e.g., is the CEMS malfunctioning or is it due to calibration error?

11. Question: Are loading racks for diesel, jet fuel, or lube oil subject to Refinery MACT or other air rules?

Answer: Some of these liquids are likely to be covered under the Organic Liquid Distribution MACT, which is slated for the year 2000. However, there are some aviation fuels that may be covered by Gasoline Distribution MACT. You have to look at that rule for the definition of gasoline. There may be some aviation fuels that meet the definition of gasoline and, if so, they would be covered under Gasoline Distribution MACT. In some States, loading rack emissions may be controlled under State or local rules, too. So in general, there may be some other air rules that apply to some of these other organic liquids and to loading racks.

12. Question: Clarify the difference between the two HAP lists containing 189 and 28 entries. Is the 189 list applicable to the whole source and the 28 applicable to each individual process unit?

Answer: The 189 list in the Clean Air Act is used to determine whether or not you are a major source under the definitions in section 112. The Refinery MACT rule requires you to do certain things for streams that contain the 28 specific HAPs that are in Table 1 of the refinery rule. Those 28 HAP trigger some of the specific applicability criteria. For example, one could possibly have a lot of inorganic material in a stream that is not relevant to this rule. So you would consider that in the applicability criteria under this rule.

13. Question: The EPA has successfully used Question and Answer Documents to answer unresolved issues on fuels issues. Currently, the EPA is responding to industry questions on fuels issues by posting responses on the Agency's Electronic Bulletin Board. Is the EPA considering a similar mechanism to respond to industry questions on the Refinery MACT?

Answer: There has been a suggestion for the EPA to use an electronic bulletin board to publish and make everyone aware of any clarifications and changes to the rule. I certainly cannot see any reason why this could not be done. This activity would take place on the Technology Transfer Network (TTN). We have a list of tentative corrections (in the workshop manual), and that's the type of material that could easily be put on the TTN system.

14. Question: Does "hexane," as listed in the refinery rule, refer to all isomers of hexane or is it just in N-hexane?

Answer: We had someone in our toxicology group look into what is listed in the statute--the toxicity data that were used when the compounds were listed. What was found is that this applies only to N-hexane. We will be preparing a memo and may be able to place this information on the TTN soon to clarify this point.

15. Question: A provision of the General Provisions of part 63 referenced by the Refinery MACT require continuous monitoring systems to be installed and calibrated according to the manufacturer's specifications. It is not always possible or desirable to install and calibrate equipment in exact accordance with the manufacturer's specifications. What flexibility is provided for cases in which the installation and calibration must be tailored for a specific application or not all of the manufacturer's specifications are required to be met to ensure proper installation and calibration?

Answer: A recent revision to the Refinery MACT (63 FR 44135, August 18, 1998) expanded the requirements for installing and calibrating equipment to allow procedures other than those specified by the manufacturer to be followed. The procedures must be written and must ensure that the equipment will monitor accurately.

16. Sulfur plant vents are exempt from the provisions for miscellaneous process vents per 63.641. Do you intend sulfur plants to be equivalent to sulfur recovery units, and are amine treating units included in the sulfur plant exemption?

Answer: "Sulfur plant vents" are excluded from the definition of "miscellaneous process vents" in 40 CFR 63, subpart CC. The miscellaneous process vent provisions are intended to control emissions of organic HAPs from relatively small vents that can be piped to nearby process heaters or other combustion devices to oxidize the organic HAPs. Sulfur plant vents, which are not as easily controlled, are being covered under the second refinery MACT rule.

Subpart CC applies to amine units and amine units are not considered to be part of the sulfur plant. Therefore, process vents from amine units must be controlled if the HAP content exceeds the requirements stipulated in the rule.

17. How do you suggest the Division enforce "as soon as" pursuant to 63.119(c)(4)?

Answer: The "as soon as" provision is another common sense requirement. What we are trying to get at is that emissions are minimized by filling "continuously and as soon as possible". It would be impossible to give a set time frame in the regulation due to the infinite number of tank sizes and situations under which filling occurs.

The wording of the provision, that the process of filling, emptying, or refilling "shall be continuous and shall be accomplished as soon as possible" implies that the activity of filling, refilling, or emptying a vessel must meet both criteria (i.e., "continuous" and "as soon as possible"). The phrase "as soon as possible" is included in the provisions to account for situations where a source has difficulty with continuously filling, refilling, or emptying a vessel. The interpretation of the phrase is ultimately determined by the implementing agency.

List of Acronyms

ANSI	American National Standards Institute
API	American Petroleum Institute
AQMD	Air Quality Management District
BWON	Benzene Waste Operations NESHAP
CEMS	continuous emission monitoring system
CFR	Code of Federal Regulations
CMS	continuous monitoring system
CSI	Common Sense Initiative
CTG	Control Techniques Guideline
EPA	Environmental Protection Agency
FCCU	fluidized catalytic cracking unit
HAP	hazardous air pollutant(s)
HON	Hazardous Organic NESHAP
LDAR	leak detection and repair
MACT	maximum achievable control technology
MTBE	methyl tert-butyl ether
NESHAP	national emission standards for hazardous air pollutants
NSPS	new source performance standards
ORD	Office of Research and Development (EPA)
PRPU	petroleum refining process unit
PRV	pressure relief vent
PSD	Prevention of Significant Deterioration
PTE	potential to emit
RACT	reasonably available control technology
RATA	Relative Accuracy Test Audits
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SOCMI	synthetic organic chemical manufacturing industry
SRU	sulfur recovery unit
SSMP	startup, shutdown, and malfunction plan
TTN	Technology Transfer Network
VOC	volatile organic compound(s)

Federal Regulations Referred to in this Document

- 40 CFR 60, Subpart J - Standards of Performance for Petroleum Refineries
- 40 CFR 60, Subpart VV - Standards of Performance for Equipment Leaks of VOC in Synthetic Organic Chemical Manufacturing Industry
- 40 CFR 60, Subpart GGG - Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries
- 40 CFR 60, Subpart QQQ - Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems
- 40 CFR 61, Subpart J - National Emission Standards for Equipment Leaks (Fugitive Emission Sources) of Benzene
- 40 CFR 61, Subpart V - National Emission Standard for Equipment Leaks (Fugitive Emission Sources)
- 40 CFR 61, Subpart Y - National Emission Standard for Benzene Emissions from Benzene Storage Vessels
- 40 CFR 61, Subpart FF - National Emission Standards for Benzene Waste Operations
- 40 CFR 63, Subpart A - General Provisions
- 40 CFR 63, Subpart F - National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry
- 40 CFR 63, Subpart G - National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater
- 40 CFR 63, Subpart H - National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks

FEDERAL REGULATIONS REFERRED TO IN THIS DOCUMENT
(Concluded)

- 40 CFR 63, Subpart I - National Emission Standards for Organic Hazardous Air Pollutants for Certain Processes Subject to the Negotiated Regulation for Equipment Leaks
- 40 CFR 63, Subpart R - National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations)
- 40 CFR 63, Subpart Y - National Emission Standards for Marine Tank Vessel Loading Operations
- 40 CFR 63, Subpart CC - National Emission Standards for Hazardous Air Pollutants: Petroleum Refineries
- 40 CFR 63, Subpart DD - National Emission Standards for Hazardous Air Pollutants from Off-Site Waste and Recovery Operations